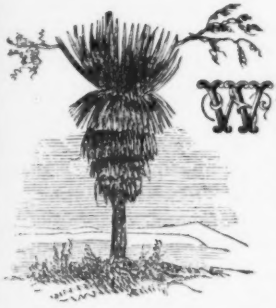


Hints on Grape Culture.—IX.

WE have as yet said nothing specially relating to the food of the vine. We remarked in one of our early articles, that the vine would grow in almost any soil; yet it has its wants, special and otherwise, which can not be neglected without detriment to its health and productiveness. Unless food of the proper kind is placed within immediate reach, the roots wander off in search of it, finding perhaps only a meagre supply, and that often under conditions very unfavorable to its proper appropriation. Not unfrequently, in this search for food, the roots penetrate a cold and uncongenial soil, where they sometimes perish, and often communicate disease to the vine itself, which thus becomes incapable of maturing its wood and its fruit. In this condition the vine becomes susceptible to the attacks of various forms of disease, and we may frequently find here the fruitful source of mildew and rot: these attacks might often be measurably prevented by a judicious management of the soil and food, whereas the vine is only too often prepared, as it were, for their entire possession. In these things we are usually more tender to our domestic animals than to our plants. The roots of the vine may, to a considerable extent, be kept at home by a judicious system of feeding. This we shall endeavor to explain when we come to treat of the nature and functions of the roots.

We propose now to offer some hints on *Composts and Manures.* Manures are usually, but not very happily, divided into Animal, Vegetable, and Mineral, as they happen to be derived from either of these sources; it is only the last, however, that are usually kept distinct. Under the first head we place all animal matters, such as flesh, hair, leather, hoofs, woolen rags, wool, bones, horns, &c. Under the second, muck, sods, green crops, leaves, weeds, &c. Under the last, lime, marl, ashes, plaster, &c. Barn-yard manure is of a mixed character. Liquid manures are variously composed. *Composts* are made by mixing any or all of these together, and are of especial value. As we can not at present treat of these in detail, we shall confine our remarks to those most valuable for the grape, which, unlike many other plants, is almost omnivorous.

We have often expressed a most decided opinion as to the value of muck, or vegetable matter reduced to the carbonaceous form. This we make the basis for all composts for the grape. It is important that it should be well mixed all through the soil, unless the latter already contains a due proportion of vegetable matter, which is seldom indeed the case. There is no other substance whatever within our knowledge that will give such permanence to the soil: and permanence is of

the very first importance in the formation of a vineyard. This importance will be enhanced, if possible, when we inform the reader the reader that, contrary to the common practice, we banish the plow from the vineyard after the third or fourth year, since it then beomes a dangerous implement in any except very careful hands. There are other implements much better and safer. The simple reason for this is, that the best roots of the vine are within from four to six inches of the surface, (at least that is where we propose to keep them,) and the plow, except very carefully used, destroys them. After a vineyard becomes established, we must necessarily, therefore, depend upon surface manuring and surface culture.

We will now state briefly the best mode of forming a compost to be applied at the time of trenching or subsoiling. The materials we name somewhat in the order of their importance. Barn-yard manure, muck, lime, bones, (broken bones, bone chips, and bone dust,) ashes, charcoal dust, horn shavings; to which may be added, leather chips, pond mud, road sweepings, sods, potash sweepings, lime rubbish, decayed leaves, etc. Any or all of these may be used; but muck, manure, lime, bones, and ashes, are most important. It is a common practice to mix the manure with the muck at the beginning, but this is not a good plan unless the muck is already in a tolerably fine condition. If the muck is coarse and full of fibre, it should be laid up to dry, then treated with quick lime to hasten decay, and turned from time to time till it is quite broken down. There is much waste in having barn-yard manure in contact with lime for any length of time. Muck should not in any event be used in compost till it has been dried. The manure, which should always be pretty well decomposed, can very well be added when the compost heap is turned for the last time. Bones, as commonly bought, have often been boiled, and have thereby lost much of their value. For agricultural purposes, bones, whether broken or not, should contain as much as possible of their fatty and gelatinous matter, which greatly enhances their value. The compost heap should, if possible, be made under cover, or in some way protected from heavy rains. If it is not convenient to cover it, let it be made in some spot where it will not be washed away.

Let us now suppose the muck, manure, etc., in proper condition for being mixed. The reader will want to know the proportion of each material to be used; this need not be quite as exact as a medical prescription, nor is it necessary to measure the materials out. A very good way to form a compost heap is as follows: mark out the dimensions of the heap, and spread on the ground about three inches of muck, on which sprinkle quick-lime till it is quite white; then spread on a couple of inches of manure; next about three inches of muck; then a good sprinkling of bone dust or bone chips; then again three inches of muck, sprinkled with ashes; and here may be added, if you have any of them, charcoal dust, horn shavings, leather chips, etc., with a layer of muck between them, finishing with a layer three inches thick, on which begin the course again, and repeat it

till the heap is four or five feet high, if necessary, the top being covered with a good layer of muck. In a few days the heap will begin to heat, and when it becomes warm it should be turned. This is best done by working down from top to bottom, which commingles the materials thoroughly. The turning should be repeated several times, when it will be fit for use. If muck be abundant, the quantity we have named may be greatly increased, while the other materials remain the same. The heap may also be watered with liquid from the barn-yard. This compost should be spread on the surface of the new vineyard from three to twelve inches thick, according to the nature of the soil and one's own circumstances. If the soil is a good loam, such as will grow good corn and potatoes, from two to four inches will be enough. Soils varying from a light loam to lean sand and gravel, should have from four to twelve inches of compost. After being spread on the surface, the compost is to be worked in as described in a former article, the object being to get it as deeply and thoroughly mixed with the soil as possible.

A compost similar to this may be made by using muck as an absorbent in stalls, etc. This may be thrown into the barn-yard with the manure that is made, and more muck added to the manure as it is thrown out daily. At proper intervals it is removed from the yard and laid up in a heap, and turned from time to time as it becomes warmed through. If the muck is fibrous, it will require from one to two years to rot it down thoroughly. To this heap, the other materials, or such of them as can be procured conveniently, may be added a couple of months before the compost is wanted for use. No one, however, need be deterred from making a vineyard for the want of them; for though valuable additions, a good compost may be made of simple muck, manure, and lime; or, if the soil is rich in vegetable matter, the muck may be omitted, or may be replaced with leaves, sods, weeds, etc.; but to all light soils we deem the muck essential, not only to give permanence to the soil, but quality to the fruit. If the other materials are omitted, the quantity of barn-yard manure must be increased.

In our next we shall continue the subject of composts and manures this article being now sufficiently long.

LANDSCAPE ADORNMENT.—NO. 17. "TERRACES."

BY GEO. E. WOODWARD,

Civil Engineer and Architect, No. 29 Broadway, New York.

If there is a department of Landscape Art more noted than any other for its frequent failures, it certainly must be the construction of Terraces. With the established prejudices in favor of the old school straight-line Terrace, and the prevalent primitive notions of their construction, there should cease to be any surprise if failures are common.

Terraces were originally introduced as a connecting link between the house and grounds, and we must confess that, in spite of the adoption of the natural style of landscape treatment, the architectural Terrace, in connection with the house, has, to our mind, a grand and imposing appearance. It can never be, or rather ought never to be wholly abandoned, where a display of high landscape art is contemplated.

Another important use of the terrace in the artificial, or, as it is sometimes called, the geometrical style of Landscape Adornment, was for the purpose of joining plateaus of different elevations, these plateaus sometimes being essential to the proper artistic harmony of formal lines, the waving undulating lines of natural surfaces having nothing in common with rigid architectural forms. It is necessary that angles and straight lines be confined to either level or slightly inclined planes, else, by their strong contrast to natural lines, they become offensive to the eye; therefore, it was necessary to break up or separate plateaus by terraces, or reduce them by much labor and expense to a common grade.

The terrace is also made use of in the protection and embellishment of hill-sides, and it is in this manner that we propose to treat it. The formal terrace, when used for this purpose, possesses too many elements of weakness to be of permanent value, and the same cause of insecurity is applicable to the whole or any portion of it, if constructed throughout its length of earth of the same character, it being by no means an unfrequent occurrence for the upper terrace, when surcharged with water, to yield for the whole distance, and to destroy or carry with it those below. The construction of straight-line terraces on hill-sides, in addition to their unsuitableness as reliable earth-works, are, except under unusual circumstances, a matter of great expense, and among the knowing ones very generally avoided; they have become, along the Hudson more particularly, proverbial for their expense and insecurity. The proper management of earth slopes and embankments is ranked among the skillful attainments of the educated civil engineer; yet the rural community labor under the impression that an expert vegetable physiologist is by far the most competent person to deal with those difficulties which require, in others, almost a life-long devotion and experience to surmount.

There is, however, a form of terrace that recommends itself strongly to the notice of those who find a pleasure or necessity in beautifying and protecting steep slopes, a form entirely in harmony with the undisputed beauties of the natural style of Landscape Adornment, and one that possesses in a great degree the elements of strength, and the charms of beauty, variety, and economy. We allude now to the natural terrace, as shown by the receding stages of running water, and best illustrated among the alluvial valleys of the West, a portion of our country that presents some of the most magnificent natural examples of the beautiful in Landscape any where to be met with.

The peculiarities of natural terracing are, its incurvate and recurvate outline, a constant variety in the length, character, and direction of the curves, a harmoni-

ous change in each successive terrace, adapting itself to the situation of declivities, requiring but little removal of earth to form a graceful contour, and possessing conditions of strength unapproachable in either the right line or the angled terrace.

Among the leading charms of landscape embellishment, variety should be well considered. One of the most fruitful sources of variety lies in the proper management of light and shade; and wherever the bold and ever-varying effects of shadow can be controlled, it is the duty of the landscape artist to avail himself of it. The natural terrace affords the opportunity for an artistic display of light and shade which is constantly changing in effect, the strong shadows of the recesses throwing into relief the prominent points which catch the light; it also contemplates the use of embellishments not often made use of on terraces, such as ornamental trees and shrubs, singly or in masses, the gay addition of flowers, the close-shaven and neatly-kept lawn, or for the more practical and quite as enjoyable pleasure of cultivating the Grape, for it should be understood that good taste exacts no such requirements as are deemed necessary, or at least practiced, in the old school terrace, viz., that a succession of terraces should be exactly parallel, and of the same height and breadth, and not devoted to any very useful purposes, a doctrine not recognized in any natural examples.

The strength of the natural terrace is of a character that can scarcely admit a doubt; the salient curves become like buttresses to a wall, and whatever force is exerted, instead of being in one direction, as in the case of the straight terrace, is distributed in such a manner that the same cause which might break through one point is powerless in others: the conditions of security are such that they do not depend on each other.

The judicious use of the natural terrace will obviate all of the prominent difficulties of the straight terrace, and if made use of by those who have a knowledge of the proper construction of earth slopes and embankments, there should be no such thing as a failure.

ON THE AURICULA.

BY AN OLD COUNTRYMAN.

Mr. Editor:—As my papers on the Carnation and Chrysanthemum have met with your approval, I venture to send you my experience with another special favorite with old florists.

We must always remember that the Auricula is originally an Alpine plant; that cold and frost to almost any extent, it will bear when under glass; and that fire-heat in winter will do it much more harm than any frost that gets into a frame, if properly managed. But summer-heat is ruinous to it, (unless guarded against, as I shall presently direct,) and a few hours' full exposure of a

pot to such a burning sun as we have here often is enough, if it doesn't kill the plant outright, to destroy all expectation of recovering it under a twelvemonth's care. To grow Auriculas well, then, mix up an equal quantity of good loam, stable-manure a year old at least, and black peat earth. Turn this over two or three times during as many months, and mix plenty of it when you begin, for the longer you keep it the better it gets; but don't expose it to heavy rains, so as to let the goodness of the manure be washed out of it; but, except in wet weather, the more it is turned and exposed the better.

Having got your plants, say, in spring, just before they bloom, have the benefit of it, such as it is; and after they are out of bloom place the pots under a north fence, where they will be entirely in the shade, without any sun upon them at all. This you must effect in the best way you can, but you must not put any thing *over* the plants; if you do they will draw up weakly, and the heart will be so exhausted that no healthy growth will be made. Look over the plants daily, and take care they don't flag in the leaf for want of water. So let them be until the last week in August; then the time has been arrived at to pot your plants for next year's bloom, and upon the way in which you do this much of your success will depend. First, take some of your compost, and pass it through a coarse sieve, and throw the siftings on one side (you will want them presently), break up into pieces an inch square or so, some broken pots, and then you are ready to begin potting. For a plant the neck of which (at the place where the leaves spring from) is the size of your little finger, you take a pot measuring about four inches across inside. Place three or four pieces of the broken pots over the whole, and upon these put enough of the rough siftings of the compost to fill up the pot to the depth of an inch from the bottom. Then put in a small handful of the sifted compost. Now take one of your plants, turn the pot over upon your left hand, in which you will support the plant by passing the neck of it between the first and second fingers; give the edge of the pot a slight tap against the edge of your potting-bench, and the plant will come out upon your hand; press gently the matted ball of roots with your right hand, but so as not to tear or hurt them, and then shake the mould from it, so as to leave the network of roots nearly bare. (This takes many words to tell, but the whole thing is done in half a minute.) Now you will find the thick stem of the plant, which is called the tap-root, exposed to view, surrounded by the numberless mass of small roots that, if the plant is healthy, proceed from all its length. Examine this tap-root; if it is solid, nearly white, and free from black specs or rot, all is well; if any black marks appear, cut them out with a sharp knife. This done, the plant is ready for its new pot. Mind and preserve all the fine fibrous roots, which are the *mouths* of the plant, and only remove such of them as are dark colored, or have a withered appearance. To place the plant in its new pot, take it by the neck between the fingers and thumb of your left hand, and hold it in the pot so that the neck is just on a level with the top, and with your other

hand fill round it with the sifted compost, which, with a small stick the size of a quill, you must gently stir down between the small roots, giving the pot now and then a tap or two on the bench, to shake down and fix the mould. When potted, the earth should come up just to the bottom leaves, but not higher. If you bury the lower half of the leaves in the mould, depend upon it you will, before the winter is through, get half your plants rotted off at the neck. This is, of all things, one of the great points in Auricula growing.

When the plants are all potted, set them in a north aspect, out of the sun, as before; put boards or a good bed of cinders under them, so as to keep out worms, (this is a first point, too,) and then give them a thorough good watering through the fine rose of the watering-pot, so as to wet them well through. Here they are to stand until the fine weather sets in; slight frosts will not hurt them. Water them regularly; they will grow considerably; the old outer leaves will turn yellow and come off during the next two months, and by that time you will have nice short-leaved plants, with stiff necks and close hearts, which are sure signs of good trusses of bloom next spring.

As soon as signs of winter weather are manifest, whether by cold rains, snow, or hard frost, put your plants in their winter quarters. The best place for them is a common garden-frame, with a glass light upon it; but many and many a good show of Auriculas has been grown without glass at all, by having only a board top to the frame, upon hinges, like the lid of a box, to shut down at night and in hard frost, but to be open all day in fine, or raised up in front in wet weather. Take care here, too, to have something to keep the worms out.

And now for their winter treatment. In hard frost or snow, and always at night, shut down the lights close. At all other times, except in wet weather, draw the lights off all day; and in wet, and also in frosty weather, unless very severe, give air for five or six hours by raising the lights a few inches. They will want but little water until the beginning of February; only just prevent them from getting dry.

In frost throw over the frame a mat, or some straw or litter, at night; and if severe, this may remain on in the day also; and with even slight covering of this sort the plants will stand any weather. You will find their leaves get quite black with frost sometimes; never mind that; but *do* mind *this:* that when the frost breaks, and you begin to give air, don't let a hot sun come right down upon them at first, but raise the lights a few inches, and throw a coarse cloth on the frame, or just a handful of straw, thinly, so as only to let a little light through. If you have no glass, but only a wooden top, you have only to lift it half open, fasten it so, and shade the open side next the sun with a cloth. In this way your plants will take no harm with any frost, for they are hardy enough to stand almost any thing; but it is sudden exposure to the direct sunshine, upon the breaking up of frost, that kills them. During winter they should have sun; but

in the middle of some days in this country the winter's sun is pretty hot; and then I generally shade the frame for an hour or two.

As soon as you see, in the spring, that the plants are beginning to grow, you should give them a good top-dressing. For this, use the same sifted compost that you did for potting. Take a plant, and with the point of a small stick remove the top earth about half an inch deep, or rather more, and fill up its place with the new compost: at the same time take off any yellow and decayed leaves, and also any offsets that are rooted. Cut these off with a small penknife; don't pull them off. Then give the plants a good watering, so as to soak the whole ball through, because now you are going to begin growing for bloom.

Remember always, from the time the plants are put in the frames until they have done flowering, you must never water them over their leaves, because the water often would settle down in the heart of the plant, and rot it; and also that you always give water through a fine rose, holding it *close* to the pot, so that the water does not disturb the mould, which would expose the roots.

From the time you begin to grow for bloom, you must give extra covering at night, because, although frost would not hurt the plant, it will injure the young truss of flower which is now formed in its centre, and if this gets frozen at any time, in the first place your bloom will not be so large, and in the next it will not open *flat*. This is important.

Having top-dressed your plants, you will soon see their centre open, and your trusses of bloom begin to rise up on a straight, stiff stalk, and you must give water regularly, and not let them flag for want of it. But be cautious about one thing: sometimes, when the sun is pretty hot, and the trusses are growing, you will find the new leaves (which have got to be a good size) will flag in the afternoon; don't fancy this is from want of water, or you will overdo it. All that is wanted is to keep the earth in the pots just moist.

I will suppose the flower-stem is grown up nearly its full height, and that the pips are beginning to swell out. Now is the time for you to show your skill. If the weather is hot, you must at once move your frame out of the full exposure to the sun, and put it where it only gets it for an hour or two at sunrise; because, unless you contrive to keep your plants cool, the heat will expand the pips before they are half grown, and instead of having them the size of a quarter dollar, as you ought, and many sorts larger still, you will have them the size of sixpences. To grow the pips large before they expand, I have often in hot seasons taken one of the largest-sized empty flower-pots, and placed it in the shade on three stones, so as to have a draft of air through the bottom-hole, and then placed the Auricula pot in it, and put a hand-glass over it. Then, by leaving it thus for a week, and watering the outside of the *large* pot, so as to keep it wet, the evaporation from it has preserved for the plant such a cool temperature that I have had the pips a third bigger than they otherwise would have been. This, of course, can only be

done with a few plants, but an enthusiastic amateur does not mind a little trouble.

The offsets of Auriculas, when first taken off, should be grown round the edges of a good-sized pot for a twelvemonth, and then treated like the old plants.

[We are pleased to hear from you again. Like Santa Claus among the children, you always have some good thing in your "bag." It was a happy thought when you took out of it the Auricula. It is always admired, but very little grown. The amateur will only prize it the more because of the additional care of developing its full beauty. We would advise, in addition to the valuable suggestions of our correspondent, that as soon as the weather in spring gets to be pretty warm, the position of the frame be reversed, so as to face the north instead of the south. Sufficient sunlight will thus be secured, while the temperature of the frame will be several degrees cooler than if it faced the south: and this is just what is wanted to grow the Auricula successfully.—Ed.]

AMERICAN SHADE TREES.—No. IV.

BY C. N. BEMENT.

There are few things better calculated to attach us to our homes than rural embellishments. This is true, whether we apply the term to our neighborhood or individual abode. The public grounds about the great cities of Europe, some of which comprise an area of five hundred acres, are the theme of general admiration, the theatre of healthful exercise and recreation, and sources of high intellectual enjoyment. The lesser towns and villages of our own country, owe more of their charms and interest to the trees and shrubs which embellish their grounds, squares, and streets, in the eye of the man of taste, than to any ostentatious, showy brick and mortar—more to the beauties of nature than to the works of man. Nay, the highest efforts of the human intellect are in vain put in requisition to imitate the handiworks of the Creator. And when we come down to the suburban residence, and even to the unostentatious abode of the farmer, how are their beauties heightened, and their value advanced by a screen of ornamental trees.

The great objection to planting is, that one may not live to enjoy the fruit or the shade of the trees which one plants. Such an objection is unworthy of the age, which should, if it does not, have regard to the interests of the human family, and of posterity; and is, besides, affecting to hold a shorter term of life than all of us hope for, and most of us expect. "Twenty years ago," said the late Jesse Buel, "at forty years of age, we commenced the cultivation of what was termed a barren, untenable common, not an acre of which, neither a tree nor shrub, had ever been planted by the hand of man. We have now growing in our court yard, comprising about half an acre, and in the highway in front of it, fifty species of forest and

ornamental trees, many of which are from forty to fifty feet high; more than fifty species of ornamental shrubs, not including the rose, which in all the variety and hue of foliage, many be embraced in a single view from the piazza. We feel grateful to God for these rich and abundant blessings, and for the impulse which prompted our labor. We have adduced our own example, not in a spirit of vaunting, but to convince the young and the middle aged that there is abundant reason for them to plant with the hope of enjoying the fruit of their labor. The old *should* plant as an obligation they owe to society, and for the requital of which they have but a short period allowed them."

"Many a dreary and barren prospect," said the late A. J. Downing, "may be rendered interesting—many a natural and artificial deformity hidden, and the effects of almost every landscape may be improved, simply by the judicious employment of trees. The most fertile countries would appear but a desert without them, and the most picturesque scenery in every part of the globe has owed to them its brightest charm."

We claim it to be the duty of every man who is a farmer, to beautify his grounds and yards, so as to give his habitation as Eden-like an appearance as possible. Should our farmers be true to themselves, and dutiful to nature, then, with truth, of our country it may be said in the language of the poet, 'tis

> "The land of the myrtle, the cypress, and vine,
> Where all but the spirit of man is divine."

The Oak, termed by excellence the "King of trees," is remarkable for its suggestiveness of power, and consequent expression of grandeur. It is attired with the romance of early history; it is celebrated by its connection with the religion and religious rites of the Druids; with the customs of the Romans, who formed of its green leaves the civic crown for their heroes, and who planted it to overshadow the Temple of Jupiter; and many ancient superstitions give the name a peculiar significance to the poet and the antiquary. From its timber marine architecture has derived the most important aid, and it has thereby become associated with the grandeur of commerce and the exploits of a gallant navy, and is regarded as an emblem of naval powers. The Oak, therefore, to the majority of the human race, is, beyond all other trees, fraught with romantic interest, and invested with classic and historical dignity.

The American continent contains a numerous genus, comprising about sixty species, and many varieties, forty of which are said to be natives of the continent of America and Mexico. Of these the White Oak bears the most resemblance to the classical tree, in its general appearance, in the contorted growth of its branches, and the edible quality of its fruit. It exceeds all other trees, not only in its actua strength, but also in that outward appearance by which this quality is manifested. Hence it is regarded as the monarch of trees, surpassing all in those qualities that indicate nobleness and capacity. It is the emblem of strength, dignity, and gran-

deur: the severest hurricane can not overthrow it, and by destroying some of its branches, leaves it only with more wonderful proofs of its resistance.

Of deciduous Oaks, natives of North America, two require particular attention. They are, The CHAMPION OAK, (*Quercus rubra,*) and the SCARLET OAK, (*Quercus coccinea.*) These trees are beautiful objects. Planted singly, with taste and judgment, upon a spacious lawn or park, within view, at different points from the mansion, they claim admiration. Their figure is light and graceful, their foliage remarkable; and whether as mere shrubs six feet high, or as trees forty or fifty feet high, these oaks stand preëminent. Loudon says, *Q. coccinea* is one of the handsomest of the American oaks. The leaves, which are six inches long, change in autumn to a beautiful scarlet color; and unless very hard frost comes on early, they do not fall off the trees till Christmas, or later. Both are highly worthy a place in every lawn.

The SUGAR MAPLE.—Perhaps there are few trees in the American forest of more value than the Maple. As an ornamental tree it is exceeded by few, and its cultivation in the lawn should be much extended; for avenues or the streets of towns and villages it stands unrivalled. Its sap affords an article of indispensable use, which is manufactured at the most leisure season of the year. Its timber is valuable in the arts, and ranks next to the hickory for fuel; its shade is umbrageous and refreshing; its form symmetrically beautiful; and its growth is perfected in almost every soil. Whether we regard the beauty of its flowers and opening its early spring, of its red fruits in the beginning of summer, or its red foliage in autumn, it deserves to be considered one of the most ornamental of hardy trees.

If you want shade, plant the Maple; that will give you in a few years, in a good soil, a firm, round-headed tree, with a canopy of leaves that will defy the sun's penetration, and in early spring a glorious display of flowers, equal to the Laburnum, and to us more interesting. A plantation made on the north or bleak side of the farm buildings, or the fruit orchard, or in both around permanent inclosures, is highly useful as a protection; constitutes a most interesting feature of rural scenery, and will ultimate in a substantial profit to its proprietor.

What a delightful feature must this tree form in a rural scenery, and how easily it might be imitated in all parts of the country. The people of Massachusetts are entitled to much credit for their early attention to this subject, where a laudable emulation prevails in transplanting their highways into avenues of trees, useful as well as ornamental.

The BLACK WALNUT.—This is a fine tree, with spreading branches and broad round head. The bark is rough and furrowed, and darker than that of the butternut tree. As an object of beauty for the adornment of our pleasure grounds, this tree can not be too highly esteemed.

When the Black Walnut stands alone, on a fertile soil, it becomes a truly majestic tree; its erect stem and the breadth of shade, its abundant, soft, and luxuri-

ant foliage, recommend it as an ornamental shade tree. "When full grown," said the lamented Mr. Downing, "it is scarcely inferior in the boldness of its ramifications, or the amplitude of its head, to the Oak or the Chestnut, and what it lacks in spirited outline when compared with other trees, is fully compensated, in our estimation, by its superb and heavy masses of foliage, which catch and throw off the broad lights and shadows in the finest manner."

The Black Walnut unites many desirable qualities in a tree—beauty, gracefulness and richness of foliage in every period of its growth. It is perfectly adapted to our climate. Its growth from the seed is certain and rapid. It is admirably adapted to extensive lawns, parks, and plantations, where there is no want of room for the attainment for its full size and fair proportions. Its rapid growth and umbrageous foliage also recommend it for public streets and avenues. The flowers expand in May, but its fruit is not ripe until October, when it presents a beautiful appearance. It is very prolific: twenty bushels of nuts are not an uncommon yield of one tree.

The wood of the Black Walnut is of a dark violet purple color, becoming deeper and almost black with age. It is valuable for its fineness of grain, tenacity, hardness, strength, and durability; it is beautifully shaded, and admits of a fine polish, and is elegant for ornament.

[We are glad to know that Mr. Bement has taken up his favorite subject again. It is full of rich material.—Ed.]

AGRICULTURAL AND HORTICULTURAL LIBRARIES.

BY COGNOSCO.

If the past should be reviewed by the Horticultural and Agricultural press, they could not fail to draw a very gratifying conclusion from the results of their labors. Although it is scarcely more than a generation since the first periodical devoted to these subjects was established, yet the progress that has been made is such as to effectually silence those limited brains, who have rung all the derisive changes upon the subject of book culture and improvement. It is only necessary to compare these interests at the present day, with their condition twenty-five years ago, to mark the improvement, and then credit the press for the liberal and general diffusion of knowledge on the subject of Agriculture and Horticulture.

When we meet now with an intelligent and successful cultivator of the soil, who is fully alive to all the improvements of the present age, we must necessarily set him down as one who reads and thinks, who takes many of the best issues of those papers devoted to his interests, and who has collected a library of Agricultural and Horticultural works, which for general use and reference have become invaluable.

It is hardly necessary to argue in favor of the value of an Agricultural book or paper, and the day has gone by for a man of intelligence to risk his reputation in underrating their influence. Past history will contradict any assertions against their importance, for the progress of such pursuits has been to a great extent due to their exertions. That we as a people have made rapid strides in these departments of our country's greatness, no one can question; and that by interchanging facts and sustaining the mediums for the diffusion of knowledge, we shall continue to improve, is equally beyond doubt.

That the value of such publications is becoming every day more highly appreciated, is apparent from the fact of their increased demand. The history of the rise and progress of Agriculture, Horticulture, Pomology, Landscape Gardening, Rural Architecture, etc., as published from year to year, has now become as rare books among the libraries of our prominent farmers and country gentlemen. The circulation during the early periods of our now leading publications of this class, was small compared with that at the present time, and full files of many of them have long since disappeared from first hands, and are ranked upon the book shelves of those who know well their value. It is only within a week that we offered three times the original price for a full series of one of the leading journals, and were politely told that if we should double our offer we could not have it.

There is a great satisfaction, while taking such publications, to feel that their value does not depreciate, and that when we have read and profited by their contents, they have still a price. We envy those who are so fortunate as to possess complete sets of such publications as the Cultivator, the "Country Gentleman," "Hovey's Magazine," and the "Horticulturist."

A library of Agricultural and Horticultural works is what every one who lives in the country should possess, and the regular issues of such journals form annual volumes of great value. It is not uncommon for many of those who occupy large estates to take duplicate copies for the gardener's and farmer's houses, and which become permanently attached to them, though the inmates may change. The result is always good, for men will read when they have an opportunity; and if they read they will improve. An investment of $15 or $20 per annum in the leading periodicals on these subjects should not fail to return many times their value.

We take great pride in possessing one of the most extensive Agricultural and Horticultural libraries in the country, and we look upon the bound volumes of this periodical literature as a profitable investment. They pay us their full price every year as books of reference and instruction, and their actual cash valuation improves annually more than the legal rate of interest. If our whole library were put under the hammer, we will venture to say that the back volumes of the Agricultural and Horticultural periodicals would bring their cash cost and interest. We esteem ourselves fortunate in having an early collection; but were we to commence life again to-day, we should at once preserve files of every leading

journal on these subjects; there are golden dollars in some of the pages, as by experience we know that our investment has come back many fold, and is still paying us a rich return.

[This is a very important and very interesting subject, and we hope Cognosco will follow it up. It is a fact apparent to every observer, that the best horticulturists and the best farmers are always diligent readers. A knowledge of new plants and improved modes of culture can only be acquired by reading, since the press is now the only medium by which such knowledge is communicated to the world. There may be an occasional exception, and there may be, also, cases where such knowledge is obtained orally at second hand; but the general rule nevertheless remains true. There are parties who are willing to forego all the pleasures of reading, but they are greatly to be commiserated. No man is fit to be intrusted with any important position who is not a diligent reader in his profession. Besides all this, we are all of us under obligations to fit ourselves for the moral and social duties of life: no man has a right to degrade his human nature. We shall recur to this subject again.—ED.]

A CONSUMER'S VIEW OF THE "WHICH IS THE BEST GRAPE?" QUESTION.

BY BROOKLYN.

THIS seems to be a leading topic now-a-days. I beg to protest against the style that has been adopted by some of our zealous cultivators. I do not object to their saying all they think of their own pet variety, but I *do* to their running down every thing else.

A Philadelphia gentleman lately stated at one of our Society meetings, that in that centre of the world certain ordinary varieties were considered "unfit for human food." Myself and family having been in the habit of using them by the peck, and never having experienced any of the frightful effects depicted as produced by them, I beg to differ from him, and to say that I *like* these Pariahs, and do not acknowledge his right to impeach my judgment for doing so. A Jew may think me a Goth because I like pork, an Englishman because I don't like mutton, and the gentleman from Philadelphia because I relish other grapes than Black Hamburghs; but that is merely their opinion. I think individual taste has its rights in this matter.

I have nothing to say against Black Hamburghs—far from it—but would rather take home twenty pounds of *ripe, well-grown* Isabellas or Catawbas, and let the youngsters have a feast, than a couple of bunches of the others to squabble over. True, I might take the twenty pounds of Hamburghs—if?—I could afford it. If I can not, must I do without grapes? The gentleman might as well tell me that if

I can not afford superfine black I must go without breeches. He put me in mind of the princess, who thought the people were very foolish to starve to death: "rather than do that she would have eaten dry bread." The idea that any one might not be able to invest in a liberal supply of Black Hamburghs never seemed to strike him; he spoke with contempt of these common grapes *because* they were sold so low. Wishing to see *good* fruit of all kinds so cheap that the laboring classes can freely indulge in it, and believing, as I do, that the raising it for this plebeian market will pay as well as other farm crops, I can not enter into his feelings. I go for elevating the cultivator of the soil as much as possible, but do not conceive that the time has yet arrived to put even only Pennsylvania under glass. Believe, if I had an abundance of many varieties, I should partake of all in turn. Roast quail is more delicate than roast beef: ergo, beef is not worth eating. Trout is more recherché than cod: codfish—avaunt.

[The gentleman from Philadelphia certainly did take very decided ground against our native grapes, and anathematized them in round, hearty terms, not very palatable to those accustomed to eating Isabellas and Catawbas. We endeavored at the time to present some facts tending to modify his views, and think we partially succeeded. We predict, however, that when he shall have become better acquainted with our native grapes in their best condition, he will commend them in as hearty terms as he now condemns them. Unripe fruit of all kinds we condemn; but *ripe* grapes, the native equally with the foreign, we esteem pre-eminently conducive to health: let all eat them as freely as they may. We think we express the opinion of all who have eaten grapes freely when we say, that we never feel better than when we eat four or five pounds of natives daily. Some of the effects described by our friend from Philadelphia may possibly result from eating *unripe* grapes, but they would follow in the case of the foreign as surely as in that of the native. Now native grapes are frequently gathered and eaten when scarcely more than half ripe; foreign grapes are very seldom taken from the vine until they are quite ripe; hence our friend may have sometimes seen ill effects from eating the former; but this would hardly warrant his deduction, that native grapes are not fit to be eaten, any more than that foreign grapes are not fit to be eaten, since the same effects would follow from eating unripe foreign grapes. We have been in the habit of eating freely of both kinds, and candor compels us to say that both are refreshing and conducive to health: Muscats and Hamburghs, Delawares and Dianas, are fit even for princes to eat, one equally with the other. The native, however, will always be the grape for the masses, and our wish is, that all may be enabled to partake of it freely.—ED.]

FRUIT TREES IN POTS:

THEIR CULTURE AND MANAGEMENT ADAPTED TO THE CLIMATE OF AMERICA.—TO WHICH IS ADDED DIRECTIONS FOR THE CONSTRUCTION OF CHEAP HOUSES FOR FRUITING THE SAME.

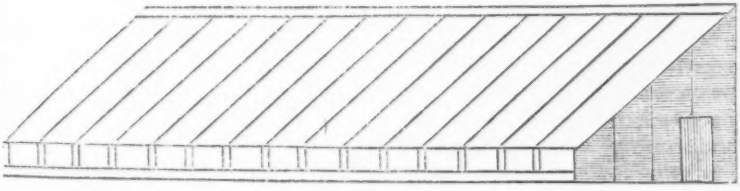
BY DR. GEO. PEPPER NORRIS, WILMINGTON, DELAWARE.

That the culture of fruit trees in pots is destined to become popular in America, it requires no far-seeing mind to discern. In a climate remarkable for its sudden changes from heat to cold, a method by which the tender blossoms may be guarded against untimely checks, is sure to meet with many advocates. This system is now creating a furor in England, where such houses have been experimented with during the last ten years, and the increasing demand for them more clearly proves than any other demonstration, their merits and advantages. In this country the probabilities are, that they will not only be ornaments to the grounds of the wealthy, but also a source of revenue to the market gardener; the cheapness with which the necessary structures can be erected, and the simplicity they can be managed with, will do much to popularize the taste for this mode of gardening. Add to this, the facts of the now almost complete abandonment of the apricot, plum, and nectarine, on account of the ravages of the curculio, and the growing fondness of the American people for rural homes, and we think we are justified in predicting almost a mania for this species of horticulture. The latter reason alone will do much for it. American tastes are rapidly becoming identified with country life, and slowly but surely we are following in the footsteps of our English ancestors. Persons who, some years since, were satisfied with a few weeks' residence in the country, now pass as many months; and many whose pursuits have allowed them, now make their permanent homes where they formerly were temporary sojourners. Additional comforts have had much to do with effecting this change. Gas and water were formerly only to be had by the citizens of the towns. The introduction of rams, windmills, and other popular modes of raising water in country houses, has put many of their inhabitants in possession of superior water accommodations over their city friends. No more are the winter evenings in rural homes made dismal by the absence of the cheerful illuminating rays of the town gas. The facilities by which the towns can now be reached have also had a considerable share in hastening the exodus: transient travellers are continually on the increase.

These are among the varied inducements that are making country homes yearly more sought after. It is to this class of inhabitants, the owners of small estates in the neighborhood of the cities, that the claims of this method of fruit culture present themselves. Any one living on half an acre of ground can have put up one of these glass-roofed structures, in which can be as well ripened a crop of fruits as in the most costly crystal palace. To the renter, pot culture presents a mode of growing fruits by which, should he see fit to change his residence on a few hours' notice, he can remove his house and trees, and in his new home at the

proper season can gather the luscious fruits. Many who have hitherto been deterred from planting fruit trees on account of the license allowed by law to depredators, now that they have a method by which their treasures may be guarded, will embark in this new system. The retiring citizen need not now wait a lifetime for his fruit crop, but may resonably hope to be permitted to gather of the golden fruit which he directs his gardener to have properly cared for.

The Glass-Roofed Fruit Shed can be constructed in a very simple manner, at a very small cost. The form may vary to suit the taste of the proprietor. We give our preference to the lean-to, as being more easily managed and more simple in its construction. It may be of any length desired; but as regards height, it will have to be borne in mind that it is necessary that the leaves should be near the glass; therefore the proposed dimensions should be taken, as they will give more advantages at the same money than any other: they will be seen to be very nearly the same recommended by Mr. Rivers in his admirable treatise. Should a shed fifty feet long be desired, we mark out the ground fifty feet by thirteen wide, designing to construct a sunk walk in the centre two feet wide and one foot deep, thus leaving a border on each side of five feet six inches, in which the potted trees are to be plunged. The back row of posts should be of cedar or chestnut, eleven feet long, and sunk three feet at least in the ground, and placed five feet apart. If the part intended to be put in the soil is previously well charred, the durability of the posts will be thereby increased. The front row of posts should be in a parallel line, and thirteen feet from the back ones; should be put the same distance in the ground, and allowed to project three feet above the surface. The posts at each end for the doors will be all the posts required. Before planting, the outside of each should be squared. On top of the front and back rows, plates for the rafters to rest on must be firmly spiked. Hemlock three by fours make substantial

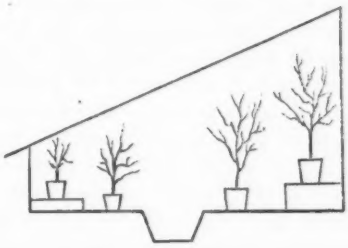


plates. To the back, front, and side posts may be nailed, plowed and grooved flooring boards; they make a good back, and the joints are sufficiently open to admit some air. The roof may be made of two by four hemlock rafters placed five feet apart, firmly braced to the back and front plates, having between them white pine strips two inches by one inch, on each of which, as well as in the rafters, grooves must be plowed to let the glass rest on. These strips can

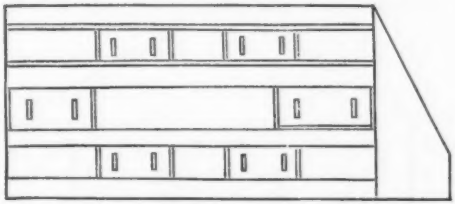
be very cheaply got out at any saw-mill. Ten by twelve fourth quality glass, lapped over half an inch, makes a tight roof of good appearance. Such a shed can be constructed by any person at a very small cost. If it is desired to build cheaply, avoid carpenters: between the cutting of the wood to waste, half working, and general ignorance, a large bill is made in a short time. If money be not an object with the builder, more handsomely finished houses may be had, but not better adapted for the purpose required.

To build cheaply, get the posts out of the woods in rough days in winter; have them charred, squared, and ready to go into the ground whenever weather permits. A short time only is required to spike the wall plates on to the front and back rows of posts, and nail on the flooring boards; being jointed, they fit readily, and present a good appearance externally. Your rafters and pine strips come from the steam sash-shop all ready for the glass; the house can be glazed during mild days in winter. A half sash door, for each end, can be cheaply had, or one of rough construction will answer equally as well and be cheaper.

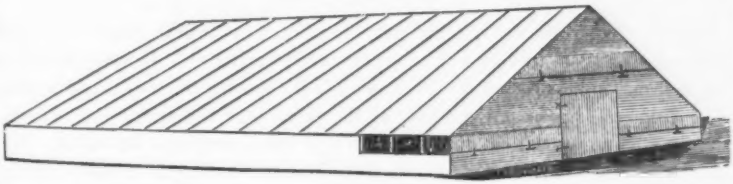
Ventilators.—It is indispensable, to grow fine fruits in pots under glass, that in addition to an unclouded roof, there should be ample ventilation; and here it is that fruit houses differ from cold graperies. When it would be proper and suitable in a cold grapery to have every crevice closed, in the fruit house half the shutters at least should be open. In the front wall cut out shutters four feet long by a foot and a half deep; ten shutters of these dimensions will be required in a house fifty feet long. In the back there should be at least six pairs of ventilating shutters; they may be made to slide in grooves, or let down by hinges, and should be at least three feet long by one foot wide. Over the openings thus made, both in the front and back wall, should be placed a thin gauze wire netting, the thinner the better, so that when the shutters are opened, a protection will be afforded against insects. Unless this netting is made very thin, it will be of no use, and should be got for the purpose; the holes should be as small as in the gauze netting used to protect beds against musquitoes. No obstacle is thus offered to the free ingress of air, and insects are effectually excluded. My own fruit house is forty feet long by thirteen wide, with cedar posts five feet apart, and three feet in the ground. On top of the front and back row of posts rest the wall plates. The rafters are five feet apart, between which are the white pine strips. On the rafters and on the strips are furrowed grooves, on which the glass, which is 10 by 12 fourth quality, rests; the back, front, and sides are made by nailing inch and a quarter flooring boards on the posts. In the front, ventilators three feet long by a foot and a half wide are cut; and in the back, three pairs of ventilating shutters work in grooves. The back shutters are three feet long by one foot wide; two are near the roof, two in the middle, two about two feet from the ground: exact distances are not essential. In addition to my three pairs of shutters I have knocked off the two upper boards, and thus made a shutter on hinges running the whole length of the building, all of which will be required in our July weather. I have two chest-



nut posts on each end of my house, on which are hung the two doors, the one inclining to the south being glazed entirely. The walk in the centre is two feet wide, and eighteen inches deep; on the ground is a wooden lattice work; the front border is five feet wide; the back divided into two, the furthest back being raised.



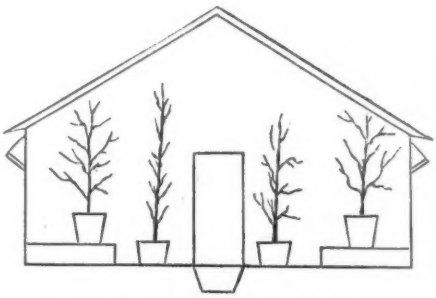
If preferred, the form of the house may be span-roofed, although we give our decided preference to the lean-to, believing it in our climate to be best suited to the wants of the potted tree. The span-roofed house may be thirty feet long, four feet high at the side walls, middle eight feet, and four feet wide—the borders on the



right and left of the walk may be divided into two; the front one raised nine inches, and supported by a plank or sod, or the walk may be sunk and the border undivided.

The trees may be potted any time the weather is suitable, between October and April. The size of the pots will in a measure be determined by the kind of trees:

for Apricots and Plums small pots will answer, while the Peach and Nectarine, being of coarse growth, will require a larger pot. The first size flower pots are fourteen inches, and are $2 40 per dozen, or 25 cents singly; second size, twelve-inch, $2 00 per dozen; third, eleven-inch, $1 50 per dozen; fourth, ten-inch, $1 20 per dozen. It is not desirable to use a smaller size than the last named. The apertures in the bottom of the pots will require to be enlarged to three or four inches; this may be very simply done with a light hammer. Where potting a large number of trees is in contemplation, the pots should be bespoken and made with a large hole in the bottom. On the hole in the bottom of the pot place some old broken crocks, pieces of broken flower pots, tiles, old broken china, or small pieces of brick sufficient to prevent the escape of the soil; on top of this put either the most lumpy part of the compost heap, or, what is preferable, bits of charcoal; a couple of handfuls to each pot will be needed. Now put in several handfuls of the compost, ramming the same well down; next the tree,



having first carefully shortened the roots; then more soil, ramming well down; do not plant too deeply; especially avoid placing the tree deeper than when growing in the nursery. Do not entirely fill the pot with the compost, as it is desirable that, after settling, the pot should not be entirely filled with earth, otherwise needless trouble will be experienced in watering. Having pressed the earth firmly around the roots, with a sharp knife, shorten the tree to at least three feet from the surface of the pot, at the same time shortening well in every branch; on no account cut off a branch entire, unless very near the collar. Allow the lower branches to be the longest, and diminish the length of each as the top is approached: the topmost branches should not be over two inches, while the lower ones may be a couple of feet long. No specified rule need be followed, only impress on the novice the importance of shortening the top well in, and if thrifty, vigorous trees are desired, severe pruning must be insisted on. When we take into consideration the severe mutilation the roots undergo when transformed into the narrow spaces of an eleven-inch pot, the sharp cutting will be justi-

fied. A suitable compost for young pot-trees may be made by thoroughly incorporating with the top soil of an old pasture field, well rotted manure, wood ashes, leaf mould, and some road sand or pulverized charcoal; any thing that will tend to lighten and make pervious the soil seems suitable. The materials should be suffered to lie in a heap for a time with an occasional turning.

[The Doctor has entered upon orchard house culture with much enthusiasm, and we are greatly indebted to him for an opportunity of laying before our readers the results of his experience. The length of his article precludes some suggestions we should like to make. We will say here, however, that we should prefer a lap of only one-eighth instead of half an inch in the glass; besides other important advantages, the danger of breakage is much less. We hope the Doctor will continue the subject, and give us an additional chapter on the treatment of the trees. —Ed.]

FACTS AND COMMENTS ON GRAPE CULTURE.

BY WILLIAM A. WOODWARD, MORTONVILLE, ORANGE CO., N. Y.

Mr. Editor: In your article on Grape Culture, No. VII., I am pleased to see the Delaware rated as No. 1; that is doubtless the right thing in the right place. With my present knowledge and experience, I should have named the Hartford Prolific No. 3, for the reason that *it is earlier*, and in many respects equal to the Concord. The Hartford Prolific ripened with me on the 6th of September this year; was then sweet and delicate; and, in the absence of other grapes which ripen ten to fourteen days later, is a variety *worthy of general cultivation;* besides, it is hardy, the temperature of twenty-one degrees below zero having had no deleterious effect upon it the past winter. When the Hartford Prolific, like the Delaware, shall become well known, and cultivated by every amateur and vineyardist, they will be known as the wine-grapes of our country; the delightful native aroma of the former will give a bouquet to its wine that is now but little known, is much sought after, and will be appreciated. Query? why not give us an essay now and then on wine-making? or do you consider it out of the range of Horticulture? The great business of grape-growing will ultimately merge into wine-making; somebody must and will make it; perhaps not the one who raises the fruit, but the fruit itself will be pressed, fermented, refined, bottled, and—drank. I hope to see the day when there will be but little sale for grapes for the table; for I look forward with some degree of satisfaction to the time when every man will raise his own grapes for that purpose; when every city and village lot will have not only its own single vines, but its grape-house; when it shall become a source of pleasure to every merchant, professional man,

mechanic, and laborer, to spend half an hour every day in his grapery, which shall also yield him fourfold for his pains, in delicious, healthy fruit for his family. Why not call public attention to it? A man may be a Horticulturist even if he has but twenty-five feet square to practice on. You once gave us the experience of a gentleman who showed what could be done on nine feet of ground. Twenty-five feet square would permit a grape-house 12 by 25 feet, and leave room for clothes-drying—which seems now to be the only use for a city yard—and admit of a dozen or twenty hardy native grape-vines on the borders besides, with a very little expense.

You think the Diana would be entitled to position No. 2, were the practice of covering the vines common. Let it become common; the sooner the better; advise every body to practice it; to cover all their vines, the hardy as well as the tender ones. It is easily done, and it pays. The vine starts earlier in the spring, it ripens both wood and fruit earlier in the fall, and insures the certainty that it will not be killed if the following winter should become, like the last one, the temperature of "Greenland's icy mountains." It is but little labor to cover a grape-vine, and whole vineyards may be covered at a percentage on the product of the ensuing season. Strawberries and Raspberries are covered as a matter of course, and why not grapes? Does the cultivator of the latter claim exemption from the command to earn his bread by the sweat of his brow? Then-cover the Diana, and call it No. 4, not 2, for its liability to rot, like its parent the Catawba, in wet seasons, is its drawback. The Hartford Prolific has an objection for a market grape, viz., dropping its fruit when ripe. So the Delaware is too small to fill the mouth, and when enough berries are taken for this purpose the accumulation of seeds is an inconvenience. It may be a long time before we get a faultless native grape. While waiting in full faith for that millennium in Horticulture, let us select the best we have, and advise the public to give them a fair trial. The Isabella this season has generally ripened prematurely, twenty-five days earlier than last year. I think this is an effect of the exposure last winter. The Woodward grape ripened 7th September under very unfavorable treatment; that is, a desire on my part to grow wood instead of fruit. I have no doubt it would ripen a week earlier under good culture. I adopt your opinion that it is an Isabella seedling. In regard to its hardiness, a vine under the mountain's shade was exposed to 29½° below zero; another, in my garden, to 21° below zero, both of which are uninjured, and have grown luxuriantly since.

[It is a great point to get started right: we believe we have placed the Delaware just where it belongs, and no person need fear planting it largely. We think we have done no more than our duty required in bringing it boldly up to a front rank: the future will more than confirm all we have said of it. On the Hartford Prolific, however, you run quite too fast for us; you will have to come back and take another start. At present we can not place the Hartford Prolific

even No. 5 for general cultivation. It is not sufficiently good to begin with, and its habit of dropping its berries, if confirmed, will render it valueless for market purposes; and we must remember, too, that those who buy grapes do so to obtain something rich to enjoy. Let us wait a while yet before proceeding too far. If we had to decide the matter now, we should give a decided preference to the Creveling, as being nearly as early and much better, besides holding its berries firmly. We have probably given the Concord too prominent a place, simply because it is hardy. It, too, has a habit of dropping its berries when left till fully ripe, but not to the same extent as the Hartford Prolific. We have seen this so decidedly manifested this fall as to give us some uneasiness. For market purposes we must have grapes that will adhere to their peduncles; and the matter can not be looked after too closely. But you have fairly upset us in calling the Hartford Prolific a *wine* grape. We try to get every thing good out of every thing; but we can not get wine out of this grape, any more than we can get gold from the quartz rock of our mountains, because it is not in it; it won't come for us, and we wish you would tell us how you do it. You must bear in mind our position, that there must be no sugar added; in fact, there must be nothing but the pure, unadulterated juice of the grape: otherwise we shall call it a cordial, or something of that kind. The Delaware, Diana, Catawba, Lincoln, and others, will make good *pure wine;* the Isabella, Concord, Hartford Prolific, and others of the same class, will not; at least our best wine makers have tried it repeatedly, and never succeeded. We do not exactly know about the "day when there will be but little sale for grapes for the table;" it would be right enough if every man *could* grow his own grapes; but if you and we expect to live to see it, we might as well begin at once to prepare ourselves for the mantle of perpetual youth. May our shadows never be less!

To be serious again. We purpose giving some essays on wine making by a competent hand, and shall begin them soon. The subject comes entirely within our range. Your suggestions in regard to growing grapes in yards will not be lost on our readers.—Yes, we think Diana entitled to No. 2, and are disposed to place it there even without covering; with covering, there ought to be no hesitation about it. It will sometimes rot a little, especially when placed near the Catawba, but not more than the Isabella when grown by itself. In regard to the size of the Delaware, we should like to see it just a little larger; but we have seen berries three quarters of an inch in *diameter*. When it becomes well established, the berries will be quite large enough for the ladies; and as to the men, if they will have such big mouths, let them eat coarser grapes. You have made a great mistake in growing your Woodward grape for wood, but a common one. Two vines at least ought to have been grown exclusively for fruit, to show you better what it is. Try this next year.—Ed.]

FACTS *VERSUS* FUSTIAN.

BY ALFRED CHAMBERLAIN, NEWPORT, R. I.

Mr. Editor:—I was educated in England as a gardener, and have pursued that avocation for so many years, that I am so strongly attached to it, that it has almost become a part of my being; and when I came to this beautiful country I bore my tastes and love for Horticulture and its kindred arts in my heart, as almost all the treasure I possessed. So you will not be surprised that I cherish any successful results of varied experiments that I have made, and feel almost as strongly inclined to meet and repel gratuitous and ill-natured attacks upon my honest success in Horticulture, as I would if they were directed against me, and intended to impeach my private character and personal interests.

If I have endeavored, in any way or the smallest degree, to deceive the public, or misrepresent the nature or result of my labors as a gardener, I certainly deserve the severest censure and rebuke. But if I am innocent of any of these charges, and am only the unfortunate target for ill-aimed and worse-intentioned bilious invectives from jaundiced and diseased sources, with your courteous permission, I wish the public to understand it through your pages, and not dub me with the ambiguous knighthood of a "Second Barnum," because a "Close Observer" wishes to elaborate his literary attempts and scientific ignorance by perpetuating himself at my expense, and forcing me to wear his verdant mantle, which he so magnanimously attempts to cast upon my shoulders.

My premises are simply these. I claim to raise successfully different varieties of fruit, including Grapes, Pears, etc., in wire baskets. I have experimented for several years in this, and have recently fully accomplished my object and realized my expectations. During the last spring I obtained a patent from the United States government for my invention, which was only granted after a careful analysis of my theory, and investigation of its practical results. I had with me at Washington no personal or political influence, unless "A Careful Observer" can ingeniously pervert the vines and trees, growing luxuriantly in wire baskets and loaded with fruit, that I carried to the capital, and submitted to the examiners, into improper influences or skillfully disguised humbugs. I obtained my patent, and received the congratulations of the examiners and the Commissioner of Patents on the success of my novel experiment. I had the honor of presenting a grape-vine covered with choice fruit, growing *in a wire basket*, to the wife of the President of the United States, who expressed her kind thanks to me. My vines were also on exhibition some days at the office of Messrs. Munn & Co., my solicitors in Washington, and were examined and admired by a large number of persons, including the gardener of the White House and several well-known horticulturists. How far does this comport with the absurd statement of "A Close Observer," who says that he examined an apparently beautiful vine in a wire bas-

ket at the orchard-house of the Hon. William B. Lawrence, in Newport, which, at first, he imagined to be loaded with delicious fruit, but on a *close examination* he discovered that the bunches of Grapes were *tied on with bast matting?* It was a *very* "close observer," in ancient times, who said, "Do men gather grapes of thorns, or figs of thistles?" and as a practical man I submit it to the good sense of your readers whether they will believe, upon the unsupported and evidently prejudiced assertion of a comparatively unknown individual, that the scientific minds of the Commissioner of Patents and his examiners, the cultivated taste of Mrs. President Lincoln, and the impartial verdict in favor of my discovery by many intelligent men, could be so grossly and absurdly deceived as to believe that I cultivated healthy vines, loaded with perfect grapes, in wire baskets, when, in reality, they were all a despicable sham, and the vines were half dead for nutriment, and the bunches of fruit were tied on with bast.

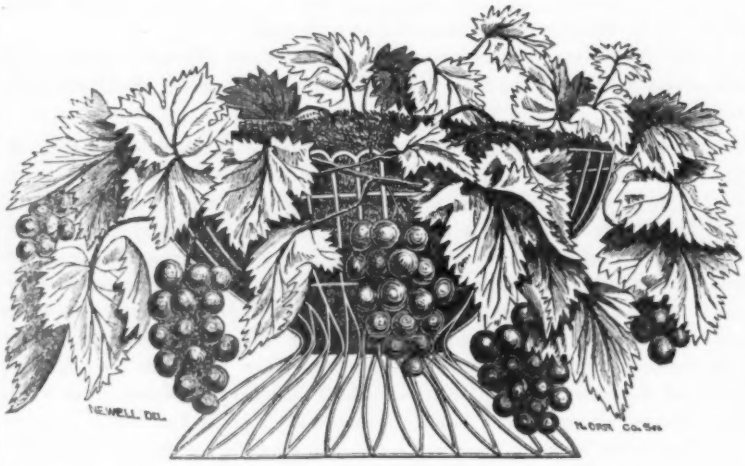
I will trouble you, in this connection, to insert the following extract from the correspondence of the New York *Journal of Commerce*, of March 17th, 1861:

"We have taken a second look at the orchard-house of the Hon. Wm. B. Lawrence, the same that we described in your columns last summer. It reminded us of the sunny South, still sunny, despite the new Confederacy; and in it are gathered, from week to week, new potatoes, strawberries, pineapples, cucumbers, and of such delicacies as these the family have partaken since Christmas. So much for having Mr. Chamberlain, the genial gardener, with his round face, and as open as a sun-flower, (and no Barnum in his nature, as ungenerously suggested by some untraveled or ill-natured writer,) aided by such sense as the good Lord has given, together with vast quantities of glass and hot steam. And here are still those little hanging baskets from which Mr. Chamberlain grows fine peaches, pears, and grapes. That writer suggests that there must be some deception here. He would never have broached that theory if he had but once looked into Mr. C.'s face. If that is not enough, look at the baskets, and see for yourselves; handle them, and you will doubt no more. In the line of novelty and genuine interest there is nothing in Newport, at this time, to be compared with this orchard-house, and we are under obligations to the proprietor again for his politeness in permitting us to enjoy that rich scene of Southern fruits and vegetation amid this rugged climate."

The well-known character of the paper from which the foregoing extract is taken will be sufficient evidence of the ability and truthfulness of the writer, without my adding that he is a gentleman of fully as keen powers of analysis and examination as the self-constituted "Close Observer." Although I am under great obligations to you, Mr. Editor, for the unvarying courtesy with which I have been treated by you personally, yet, since your "Close Observer" is the aggressor, and is somewhat inclined to exercise his decidedly embryo powers of

would-be wit at my expense, (although a gardener myself,) I trust you will permit me to refer, for a moment, to the ambiguous literary taste of your contributor, and to inquire whether the English language, tortured under the *harrow* of ignorance, can be justly considered *cultivated*, in the legitimate acceptation of the word.

The opening paragraph in his article in your January issue deserves to be duplicated as a rhetorical curiosity. It reads as follows: "Surrounded by a cloud of tobacco-smoke, sir, strong enough to suffocate any of the fair sex in the metropolis, I *set* down and give vent to my feelings upon a subject that has filled my thoughts for some time, and now, like a bird that has escaped from its cage, gives evidence of its satisfaction by lifting its voice." Is not this patentable for its



"originality?" Truly, "out of his own mouth" will we "convict him." His ideas, by his own admission, are smoke-born, and necessarily, therefore, beclouded and befogged. What kind of a cage has this individual escaped from, that he can now *sing-sing* all the day long? Does a "Close Observer" know that rusty wit, illy discharged, is "more dangerous at the breech than the muzzle?" Has he ever read Emerson's warning, couched in floral similes, to ignorant aspirants?

"The bright Rhododendron
Flames up to the sky;
Appropriate pig-weed
Creeps under the stye."

For this has enabled wiser and better men than he to discover their true running

level. Has your contributor, I would further query, adopted the sobriquet of "Close Observer," because he has escaped from some cage of *close* confinement in regions to polite ears unknown?

In conclusion, he says, "What we want are facts." These are what Mr. Gradgrind clamored for in the story, and being disposed to dispute every thing of which he had not been "a close observer," in accordance with his theory, doubted his own paternity. Now we have endeavored to supply facts, and if any of your readers doubt my statements, I should be pleased to receive them at the orchard-house in Newport, R. I., and exhibit to them the vines and fruits growing in the wire baskets. In one of your articles you say, that if this is a deception the Hon. William B. Lawrence should not lend it his influence. I am permitted by that gentleman to refer to him for the truth and accuracy of my representations, as he is the proprietor of the beautiful and admirably-arranged gardens and conservatories which are under my supervision.

Since "seeing" was not "believing" to a "Close Observer," I will say, that when he visited the orchard-house, upon one vine growing in a wire basket there was *one bunch of grapes tied up with bast.* This was a plant that I had preserved, exhibited some time, which had been drawn and lithographed, and of which I forward you a sketch, if you please to use it. These grapes were over ripe, and I feared would fall from their weight, and I therefore secured them, *although they were attached to the vine by the natural stem.* And out of this your contributor has created his "bugbear," founded, perhaps, upon that varied experience in morals that induces some men to believe that nothing and nobody can be appropriately pendulous unless they are "hung by the neck."

[Mr. Chamberlain here states distinctly enough what he has done with his wire baskets; but at the close of his vindication against Mr. Carmiencke he has unfortunately lost his temper. The provocation was no doubt strong, but this style of criticism is in bad taste on both sides, and, in our judgment, out of place in a magazine like this. Both have now said sharp things of each other, quite too personal, and hereafter whatever is said must be confined to the merits of the wire basket. We desire to extend every possible courtesy to all our correspondents, and in return we think they should seek to render our position as pleasant as may be. We insert the engraving sent, in order to give our readers some idea of how the baskets look.—Ed.]

THE NORTHUMBERLAND FILL-BASKET RASPBERRY.

(*See Frontispiece.*)

We present for a frontispiece, this month, the Northumberland Fill-basket Raspberry, from a drawing made by a lady artist. This Raspberry is sometimes

called the Northumberland, sometimes the Fill-basket, but its full name is the one at the head of this article. It is a comparatively new variety here, and ranks among the hardiest. The canes are short and stout; the fruit is firm-fleshed, of ing. We have fruited it only one season, but consider it desirable, since we have found it to do well without covering, though it may possibly need protection fur- good size, and good quality; it is productive, and continues some time in bear- ther North. Mr. Ferris, of Throgg's Neck, has grown it two or three years, also without covering.

BROOKLYN HORTICULTURAL SOCIETY.—CONVERSATIONAL MEETING.

The regular Conversational Meeting was held on Tuesday evening, Oct. 1, President Degrauw in the chair. The meeting was opened by a short lecture from Mr. P. B. Mead, on the flowers on the table. Dahlia "*Mrs. Burgess*," a seedling, color the nearest approach he had seen to a blue Dahlia; a bluish lilac, almost a globe. It is a flower of great substance; it has the power of throwing out petals, and preserving its form a long time; centre low, but very good. Thinks it will not produce much seed. He concluded by saying that Mrs. Burgess was a good deal handsomer than Mr. Burgess.

Two new flowers from Mr. Weir, "Tritoma uvaria," and "Tritoma uvaria grandiflora," a seedling of the first. He had seen 16 inches of flowers when fully opened. The last is a great improvement on the first.

"Bilbergia thyrsoides," from Mr. Hamlyn, has a military look, and will please the ladies, who are fond of military men.

Seedling Antirrhinums, from Mr. Burgess, that do him a great deal of credit; some very fine; one with white throat, a great beauty.

Daphne cneorum, from Mr. Burgess. We shall have to call it a perpetual bloomer, having seen it here at every meeting; have heretofore spoken highly of it, and recommend it again for the parlor, greenhouse, and garden.

Pears from Mr. Chorlton. Duchesse d'Angoulême and Beurré Bosc, very fine and large.

The presentation of prizes awarded at the fall exhibition was then made by Mr. Mead. He remarked that the influence of public exhibitions never ceases, and they are fortunate who are successful in carrying away objects like these, to hand down to their children. This large pitcher is awarded to Messrs. Elwanger & Barry, of Rochester, for a fine display of fruit; if they were here it would be a pleasing duty to pay them a well-deserved compliment.

This pitcher is awarded to Mr. Andrew Bridgeman, of New York, for a large and beautiful collection of plants; can not say less than that he made one of the finest shows in either Brooklyn or New York; was his first exhibition in Brook-

lyn, but hoped it would not be his last. Give this cup to your family as an heir-loom.

Mr. Bridgeman, in answer, stated that for a number of years back he had been either a manager or member of the committee of arrangements at the several exhibitions that had occurred in the city of New York, and did not think it would be considered just for him to compete, in that capacity, for premiums. He had and must again express his thanks for the manner in which he had been received at the Conversational Meetings and the Exhibition. More interest was shown than he had ever seen; far more than at the New York exhibitions. Looked upon this Society as a great advantage to the community and the trade in general.

Mr. Mead.—This cup was awarded to Mr. A. G. Burgess, of East New York, for displays of cut flowers of superior character at the Conversational Meetings. Mr. Mead stated that it afforded him a peculiar pleasure to attend these meetings; the gardeners bring flowers to exhibit, and prepare surprises for the ladies at the close. Take the cup, Mr. Burgess; may it always be brimful of happiness. If you put wine in it, do not let it be stronger than yourself; and if it should happen to get in your head, be very careful that it never gets in your boots. (Laughter.)

This cup was awarded to Mr. Messelberg, of Williamsburg, for choice collections of flowers, exhibited at the Conversational Meetings. Did not think any caution necessary after what had been said, but take the cup home with you, and let it always be an incentive to good thoughts and an ambition to do well.

The cup for Mr. John Humphreys, of Brooklyn, for the same, was given in charge of the Secretary, he being too sick to be present.

We have left to the last what, in some respects, ought to be called the best. These prizes, a cream-jug and salver, one from the New York Society, and the other from the Brooklyn Society, both for ornamental designs, were awarded to an intelligent young lady, of refined taste, whose name it would not do to mention, as she was very modest. Ladies have a higher appreciation of color, harmony, and grouping, than men, and make much better bouquets.

Will now take up the subject of the evening, the Culture of the Grape. Believe the ladies can grow better grapes than the men, or, at any rate, they taste better from a lady's hand; thinks that Dr. Houghton will modify his opinions on the native grape. What he would hear here to-night would tend to modify his opinions. Mr. Bridgeman said he would prefer to make his remarks in Dr. Houghton's presence; don't like to speak behind his back. His Philadelphia logic we can not understand about the cultivation of the native grape in and around Philadelphia, which is a failure except in city yards. Dr. Houghton has been engaged three years in cultivating native grapes, and says he does not think them fit to eat; has spent some thousands of dollars, and yet is not willing to give them up, as he asks some questions about transplanting, yet will not encour-

age the native grape, as he says the foreign grape is superior; forgets the foreign grape is not accessible to all; might as well discourage the growth of cotton, as the wealthy can buy linen and silk. Although we admit the foreign grape is a luxury, is it right we should discourage the culture of the native grape when it is a pleasure and comfort to so many? Dr. Houghton's remarks were made before several societies, and he would like to have his arguments refuted; will return to this subject at a future meeting; is not well enough to proceed.

Mr. Mead said the subject was changed at last meeting from a systematic plan and we have some reason to-night to depart from the rule to hear Dr Grant. Proposed to Dr. Grant the following questions:

1. What are the characteristics needed in a native grape, to constitute it *best* as a fruit for the table?

2. Are these characteristics inconsistent with those needed for the best grape for wine?

3. What is the comparative value of the native and foreign grape as objects of culture for profit?

4. Is it your opinion that the native grape can be profitably grown for the purpose of wine-making?

5. Is not thorough preparation of the soil more economical than poor preparation?

6. Is not some good system of training indispensable to the continued productiveness and longevity of the vine?

7. Can grapes be grown successfully in our city yards, as a general thing? If so, what are the necessary conditions as to exposure, etc.?

These questions, Mr. President, just proposed by our friend the Editor, have opened windows into all of the passages that lead to the grand hall of the vine; and, if we explore them carefully by aid of the light which he has held up to us, we shall obtain sufficient knowledge of all that pertains to it to resolve the important questions that are now perplexing the minds of many who are much interested in the subject.

It is a matter in which every one has a real interest, whether he now feels it or not, and deserves a much more extensive examination than the present opportunity will enable us to give.

Question 1*st.* "What are the characteristics needed in a Native Grape to constitute it "best" as a fruit for the table?"

Those who have eaten grapes no better than the Isabella, or imperfectly-ripened Catawba, have taken grapes as we take the lot of life—a mingling of good and ill, in which, from untoward circumstances, the ill often appears to predominate; at least it is so to those who look for unmingled enjoyment.

Persons who have enjoyed the foreign kinds in their perfection, freely, for a length of time, have generally lost the ability to perceive any good in these native kinds, and characterize them as "bad," or at least not attractive, by the very

small amount of good which they can discover, and refuse to partake of them, when, after repeated trial, they find nothing to enjoy, and much that offends.

But, in speaking of their own pure, rich grapes, they use terms of enthusiastic praise, that seem extravagant to those who are either quite ignorant of them, or only at rare intervals taste them, and that with the palate merely, and have not acquired the enlarged ability to enjoy, which, in its full developement, comes only from culture and use. They, under favoring circumstances, have apprehended the truth, and speak that which they do know; but this knowledge and enjoyment, with its accompanying elevation and refinement, very few can have, if they look only to foreign varieties for it. They are expensive luxuries, and must remain still exotic—beyond the reach of the many. And that this is no matter of regret we shall presently more fully see.

Now let us see what the vices and virtues of our ordinary natives are. If we critically examine a well-ripened Isabella in its best condition, we shall find in about two-thirds of its substance some vinous refreshment, and enough sugar to make it palatable. One third or more of the central portion is a mass of fibre, and crude, unripe, adhesive substance, consisting chiefly of citric acid. In eating, we pass this by the palate, before it is entirely divested of its mucilaginous and sugary coating, with the swiftness of a bullet in its flight, that it may not offend the taste while we enjoy the better part. The centre, besides the acid mass, includes the seeds within it, and this *theoretically* is not only injurious to the health, but extremely dangerous. Practically, extensive experience not only denies the truth of this theorizing, but teaches the direct contrary, and the unanimous opinion of those who have used the Isabella most abundantly in what is considered its fully ripened condition, is, I think, that it is not only not injurious, but even in most cases positively healthful. We must, of course, except rare idiosynocracies, which can take the grape only in its most refined and concentrated form without injury. The Isabella has, in my opinion, been a friend of humanity, and its mission, which I think nearly accomplished, must be regarded as one of beneficence.

The Catawba, in consequence of not ripening so early, has not been so extensively disseminated, nor so well known, but in all that constitutes goodness of quality, is a far better grape. The Isabella may be characterized as feeble flavored, that is, deficient in tartaric acid, which is the basis of high flavor in grapes. The Isabella is only *apparently* sugary, in consequence of offering but a moderate amount of acid for the sugar to overcome. In quantity of sugar it is much below the Catawba, as it is in tartaric acid. The ground work of high flavor being a large amount of acid overcome or qualified by a larger amount of grape sugar, much else is required to constitute a high degree of excellence; but with a deficiency of these it can not exist.

The Catawba contains a large proportion of both tartaric acid and sugar, when in best condition, and may be called, in contradistinction to the Isabella, a high flavored grape, and rich in the essentials of wine-making, which the Isabella is not.

The Catawba is deficient in delicacy and refinement required to give it high finish; but from it, in the climate in which it matures, wine of high character is made, which can not be said of Isabella. From the Isabella an effervescing or sparkling wine is made, but all of the Ohio sparkling wines are made by the addition of sugar, and with that they can be made of any grape, however poor in wine-making qualities.

As a grape for the table, when well-grown and ripened in a suitable climate, and particularly when produced in a long, very dry, hot season in this climate, the Catawba has a high degree of excellence, and in some important points greatly surpasses the feeble flavored (feeble charactered) kinds of Europe, that are held in high estimation there for the table. I speak of the various Sweetwaters, Royal Muscadines, and best of all this family, the renowned Golden Chasselas of France. But it must also be remarked, that these kinds, as grown here under glass, are very different from the same fruits grown in the open air in their own country. Here they are very greatly increased in size, but as greatly deteriorated in quality, so that they may be said to consist mainly of mucilage, sugar, and water, with a slight grape perfume, and are almost entirely devoid of the vinous refreshment which is the crowning excellence of the grape, and necessary to constitute it the fruit of fruits. Even in the best condition in their own country they lack the vital energy that is required for wine, and consequently can not meet the requirements which we demand for a "Best" table grape.

The Catawba may be characterized as sugary, vinous, and refreshing in an eminent degree, and not only wholesome, but positively healthful by its generous nourishing, tonic, and aperient qualities. In its best condition of excellence it is a great favorite with the sick, and particularly with those suffering from nervous and febrile debility.

But with all these excellences, by reason of great defects it falls far below our standard for best. Although less acrid and pungent in its skin than the Isabella, it is never entirely unexceptionable in this respect, nor is it ever altogether devoid of a crude acid centre, and always retains a degree of astringency, which, although not prominent unless carefully sought for, will not permit us to call it strictly pure in its vinous flavor; and when tried by the high standard which some of its own offspring afford, it is found to be much wanting in that fine assemblage of qualities that gives completeness and full satisfaction.

Let us now, for a few moments, take up for examination our favorite among the foreign kinds, the Grizzly Frontignan. Here we have a large amount of the acids that lie at the base of excellence in the grape overcome by a very large amount of sugar. (It should be observed that the amount of acids is large in this only in comparison with the foreign kinds before named; for the amount is not large compared with the Pineau or Reislings from which the Clos Vougeot, Hermitage, and Johannisberg wines are made.) But besides this it is rich in the harmonious mingling of all those innumerable qualities which chemistry has sought

in vain to detect or describe either in the grapes or in the wine. These constitute a grape of high, finished excellence, which I perhaps should say satisfies at all points, and offends in nothing. Its flesh is of equal consistence to the centre, and sufficiently tender, all equally flavored; and its skin is just thick enough and of sufficient strength to safely contain the abundant juice, which is little else than sugary wine. In this are joined in a very high degree, and perhaps equally, excellence for the table and for wine.

We are not ignorant of the fact that there are some who have never made the comparison in the true sense of the word, either from indifference or want of opportunity; and some, with whom nature or circumstances have been very parsimonious in their dealings in not having given them the power of perception to discriminate and enjoy, who have not discovered the great superiority of the Catawba over the Isabella.

To the careless and indifferent I would say, you are neglecting to accept good things that are offered, to the abridgment of your own enjoyment, and if we can induce you to give more attention to this matter, we shall receive your gratitude.

For those who have not the ability to perceive the finer qualities, and can only know things by their asperities and faults, we have a kind, compassionate feeling, but no words of dispute or argument, for we could not be understood by any ability with which we can address them. They can not comprehend what the term grape implies to those of fine and cultivated perceptions.

The Grizzly Frontignan, which we have placed in the class "best," will be regarded as strictly so—that is, without a superior by very many; but those who wish for more active refreshment will seek a grape that will make a rich *dry* wine rather than the sweet Muscatella, which is the produce of the Frontignans. This may be characterized as sweet and luscious, but not the wine that Paul would have recommended for the stomach's sake. Our own Diana makes a wine of the latter class, pure, rich, eminently refreshing and permanent, as if acting by large nourishment rather than by stimulation, as is the case with those marvellous Rhine wines, not followed by fever, headache, or depression as secondary effects, such as usually follow from sweet, exciting wines, which are drunk to please the palate merely, or the alcoholic, whose object is high excitement. As a grape for the table, pure, rich, and distinctively vinous and refreshing, the Diana, in its best condition, may be considered but little inferior to the Frontignans, only wanting in that uniform tenderness which should be considered indispensable in a perfect grape. In *vinous flavor* it is not, perhaps, equalled by any of the Frontignans, and its high character will be fully recognized in this respect when it becomes better known to the discriminating taste. In the matter of *delicate aroma*, however, the Frontignans may claim a superiority, though this is far from being the first point of excellence, as we have already indicated. The vinous grapes grow most upon the appetite by use, and delight not merely the palate, but the whole man. The Diana, both for the table and for wine, may be said to supply all the defects of the Catawba, to

those who have known nothing better, and all pronounce it an exceedingly good grape. Its full measure of goodness must not be expected from very young vines, and this is true of all of the vinous class.

I have adduced numerous examples to show that the elements to be considered in the solution of this question are not few or unimportant. I will cite one more native in which these elements of quality will be found assembled in an unequalled degree of excellence, resulting in nearly equal eminence both for wine and for the table. This is the Delaware, and one important circumstance in regard to it should be noted. It is remarkable for long keeping, and dries readily to raisins, retaining both sugar and vinous life remarkably; but one important portion of its excellence is extremely fugacious, and without care will scarcely be fully retained much more than twenty-four hours. This appears to be the living force by which its components are held in effective junction, and which, when present, affords a peculiar enjoyment beyond that of any other fruit. It was first noted by Professor Warring, who speaks of it as "thrilling him with delight."

If we require the superlative in quality, we must abate something in size, with, perhaps, a seeming exception of the Muscat of Alexandria; but this, when fully understood, does not amount to an exception, unless as it is grown by the aid of fire heat in a vinery, and even then it lacks the vinous life which is indispensable.

In foreign grapes, *thinness* of skin is an important consideration, because the skin of those kinds is inseparable from the flesh; but in the Americans it separates readily, and is not eaten except in such kinds as Herbemont, Lincoln, Lenoir, and Elsingburg.

Our examination has been lengthened by a strong desire to know and to exhibit both the amount and kind of excellence that may be found in any grape, foreign or native, that we may be just and reasonable as well as comprehensive in stating the characteristics needed and to be expected in a native grape to constitute it "Best" as a fruit for the table.

According to our showing, it may be said, 1st. The skin must be without offensiveness in odor or acrid pungency; 2d. That it must be sweet and good to the centre; 3d. The elements which constitute its pure, rich, sugary, vinous flavor, must be so perfect in their balance and mingling that the more intimately the grape is known, the more full will be the enjoyment of flavor and refreshment.

Among the foreigners, this may be found in a good degree in the Black Hamburgh, conjoined with great size, but in a superlative degree only in such small kinds as Reisling, etc., which are much smaller in bunch and berry than our own Delaware.

Question 2d.—"Are these characteristics inconsistent with those needed for the best grape for wine?"

The answer to this will require but very little consideration, for if our views of the former question are correct, the inference will be already present in the minds of those who have followed our course of remarks on grapes for the table.

Those generous qualities which render a grape most excellent for wine, are the same that we esteem most highly in a grape to be used as fruit; but it will not do to accept this as true universally, for some kinds possess all of the high properties for wine, and are lessened in value for the table by exceeding smallness of size as to bunch or berries—by disproportion of seeds or deficiency of juice, etc.

Pure wine may be said to be the true expression of the richness of the grape after all extraneous matters are laid aside, with as little change as possible to the principles as they exist in the grape and constitute its value. A little alcohol is necessarily formed; and it should be very little, for if much is formed, valuable principles are not only wasted, but the usefulness of the beverage greatly abridged, and often destroyed by the formation of a larger proportion of alcohol. Those remarkable wines of the Rhine, in which alcohol is but an unimportant accident, with more alcohol would be inadmissible where they now so gratefully refresh and strengthen, and soothe excitement. In this case, the mucilage and frame work of the fruit only are taken away, and the fruit in its purity remains in the form of limpid wine, by which, through the stomach, the whole languid being is refreshed.

[We can not at present spare more space for these interesting proceedings. Having been furnished with the notes used by Dr. Grant, we are enabled to give his remarks in full, and shall continue them in our next.—Ed.]

A WORD ABOUT FIGS.

BY R. S. S., SUNNYSIDE, N. J.

How few there are in this latitude who have ever eaten Figs, ripe and fresh from the tree! Or if, perchance, they have tasted a single specimen raised by dint of great care in a pot or tub, can scarcely credit the fact that Figs may be grown, even in this Northern latitude, not as exotics under glass, but as an out-door fruit; and gathered, not in single specimens, but in generous abundance and luscious sweetness. Yet the fact is nevertheless so, and, under favorable circumstances, two crops may be realized in a single season.

The flavor of this fruit is not generally esteemed by those to whom it is a new sensation. The taste must be cultivated, and then it becomes as fascinating as the Tomato or the Olive. Who does not remember the unmitigated disgust which the first taste of the Tomato or Olive excited? How hard it was to be persuaded that they were fit food for mortal man, or even to be tempted to make a second trial! Yet who can tell how the taste grew upon him? It is even so with the Fig. We have heard the tyro pronounce a fine luscious Fig *insipid*, or *too sweet*. We once thought so ourselves, but with years came wisdom—*experientia docet*—

and we now sigh over the breakfasts which, whilom, under the canopy of sunny Tuscany, we used to make off a well piled-up plate of fresh and luscious Figs, eschewing all meats or other solids. Reader, this is not poetry, but fact; and in the plenitude of our benevolence excited by such recollections, we desire for you a similar experience.

As to the culture of the Fig, there is nothing difficult. The chief requisite is to protect the tree against the severity of the winter; and this is done in precisely the same manner as the tenderer varieties of the Raspberry, viz., by covering with earth. We have seen a protection of straw resorted to, but have never known it successful in this latitude. The best method of protection is to dig about the tree in the fall, deferring the act as long as the ground remains unfrozen, and then undermining and throwing the tree, so that all the branches and canes lie upon the ground; and then to shovel upon them soil enough to thoroughly bury them beyond the reach of the frost, taking care to so leave the ground that all excess of water will readily drain off.

There is a decided advantage achieved in this process in the way of root-pruning, which prevents the plant developing too much into a tree shape, and thereby rendering it, as years increase, more difficult of being protected. The uncovering should be delayed as long in the spring as possible—at any rate, until the long cold storms of early May are passed, say until about the 12th of May. Then, if nothing untoward happens, you may look for a Summer and Autumn crop. The season this year has been decidedly favorable to the fall crop, and at this moment of writing we are luxuriating in abundance, with a promise of still more. Those that come too late to ripen should not be despised as worthless; for they may, by skillful hands, be converted into a delicate and delicious preserve. We have an ancient spinster aunt who, bless her dear old heart! put the idea into our head, and once, while on a visit to us, gathered the last of the Figs, and made us a jar of preserves which went far ahead of any East India preserves.

But enough about Figs for the present. Should our Editors care *a fig* about us, we may hereafter have another word to say about *culture*.

[Of course we prize you above many Figs, so send along the "culture," and a plate of figs with it, if you please, for we have not to learn to love so delicious a fruit. We have knowledge of two Fig "plantations," managed very much as you suggest, and the success is complete.—Ed.]

EDITOR'S TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, packages by Express, &c., should be directed to the Editors and Proprietors, 25 Park Row, New York. Exchanges should be addressed to "THE HORTICULTURIST."

A WORD FOR OURSELVES.—As we approach the close of the year, it may not be out of place to give our readers some intimation of our plans for the future. The recent addition to the editorial and business departments of the magazine will enable us to increase its value in every respect as a standard journal of Horticulture and Rural Art. In consequence of the great attention now being given to the culture of the grape, and the often expressed want of reliable and impartial knowledge in regard to cultivation, varieties, &c., we shall devote an extended space to this subject, believing that in so doing we shall meet the wishes of a large class of our readers. The grape, undoubtedly, is destined to become our leading pomological interest, and a matter of considerable national importance; we purpose, therefore, making it one of our specialties. In addition to our own editorial articles on this subject, we shall give others from writers of well-known ability, including a series on the manufacture of wine. Fruits generally will receive a full share of attention, not only as objects of luxury and gratification, but especially in reference to their value for market. In this connection, due space will be given to the cultivation of fruit under glass. Plants and flowers will continue to receive their full share of attention, constituting, as they do, an additional charm to every home, from the highest to the humblest. The inmates of the vegetable garden, likewise, will claim a share of our attention, and we shall give more space than heretofore to the wants of those occupying small plots of ground.

Landscape Gardening, Ornamental Trees, Engineering, &c., will be liberally treated, and embrace all matters of taste and construction necessary to their full development and understanding. The subject of Rural Architecture is one of growing importance, which we shall endeavor to treat fully. Horticultural Buildings will receive special attention. The construction of glass houses for growing fruits and flowers is by no means fully understood; as a matter of economy and utility, combined with architectural beauty, there are many improvements that rarely get beyond the professional horticulturist. In addition to all this, we shall

furnish full information on every subject relating to the progress of Horticulture, Gardening, Entomology, Botany, Hydraulics, Drainage, &c. Each volume will be liberally illustrated, and form a record of Horticulture not elsewhere to be met with.

Every effort will be made to improve the Horticulturist from month to month, and in respect to literary ability and typographical art it will be kept fully up to the highest standard, and as such we offer it to the horticultural public, believing that, with increased energy, a more extensive list of contributors, and better facilities, it will meet their requirements. The times require that we should neglect no means to increase our circulation, and with it our usefulness. We hope, therefore, that each one of our present subscribers will interest himself so far as to procure us at least one new name, and in that way help us to carry out our plans. Let us all work together in such a good cause.

Rosin Smoke as a Remedy for Green Fly.—The Aphis is one of the most annoying insects that the gardener has to contend with, especially under glass. Fortunately, the Aphis is measurably under our control; tobacco smoke, whale oil soap, etc., when promptly applied, are always effective, though they can not be considered very elegant applications. The Aphis, however, has during the past season made its appearance out of doors in truly formidable numbers, and any new remedy, being equally effective with tobacco, but cheaper and more cleanly, will be welcomed by all. Such a remedy Mr. Jules Delaleux, in a recent number of the *Revue Horticole*, claims to have discovered. It consists simply of the smoke of *rosin*, a substance that is cheap and within the reach of all. He says, "For some time the great majority of horticulturists engaged in the cultivation of Peach trees have employed for the destruction of the green fly, which commits a great deal of depredation upon these trees, the smoke of tobacco, and with great success; but as I have always considered it expensive, I have replaced it with great success by another, the price of which is comparatively insignificant. For several years I have used the smoke of *Rosin*. Rosin furnishes a larger quantity of smoke than tobacco, and till this time has given me results quite satisfactory. It is sufficient, I believe, to bring this experiment to the attention of horticulturists, who will not hesitate to make use of it, the price of rosin being a great deal cheaper than that of tobacco." We hope this simple remedy will meet with a trial.

A New Grape from Pennsylvania.—We last fall spoke highly of a new grape from Catawissa, Penn. Samples received this fall fully sustain its high character. We shall in our next give it a name, and describe it, a drawing being now in preparation.

A New Flower Pot.—Mr. Bridgeman has placed on our table a new flower pot, which is one of the best things we have seen. It is made of fine clay, is firm and porous, has an ornamental rim, and in all respects is a very neat, dura-

ble, and useful article, especially for rooms. The color is a pretty light drab. The price places it within the reach of all who want a tasteful and good article.

QUEEN'S COUNTY AGRICULTURAL SOCIETY.—The annual fair of this Society was a decided success. Our account is crowded out, with many other things, till next month.

RARE BOOKS.—Our readers will find in Mr. Miller's advertisement a collection of books not easy to be got in this country. Many of them are rare, and are worthy of special examination.

A NEW PEAR.—From Mr. E. Rockwell, of Middletown, Conn., we have received a seedling pear of excellent quality. As our outline is not finished, we defer a description till next month.

THE DELAWARE.—Mr. Samuel B. Parsons, of Flushing, writing from Brattleborough, Vt., says: "I saw at Springfield a Delaware vine three years planted, bearing *one hundred and sixty* bunches, many of them five inches in length." That will do, even for the Delaware.

WANTED.—We wish to procure the following volumes of the HORTICULTURIST: vols. 1 to 5, (1846 to 1851;) vol. 8, (1853;) and vol. 13, (1858.) For any twelve numbers, we will send a copy of the magazine for 1862, or a bound copy for 1860 or 1861. We will make a cash offer for the above volumes, or for single numbers, on receiving a list. Those who wish to complete their sets, should make immediate application.

A SEEDLING PEACH.—Mr. Cranstoun, of Hoboken, sent us a seedling Peach Oct. 18, which was then in good condition. It is a large yellow fleshed Peach, with a small pit; sweet, moderately juicy, and very good. Its large size, late ripening, and good quality render it valuable.

NEW BRIGHTON HORTICULTURAL SOCIETY.—One of the good effects of the recent successful exhibition of the Brooklyn Horticultural Society has been the inauguration of a Horticultural Society at New Brighton, Staten Island. For this we are mainly indebted to the exertions of Mr. Ripley, and a few others whose names we can not recall. In about two weeks from the time the subject was started, a very interesting exhibition was held, which passed off pleasantly and successfully. We went down and helped them in a small measure, but were compelled to leave before the close. Messrs. Ripley, Chorlton, Egan, Decker, and others, took a prominent part in the exhibition, at the close of which officers were elected, and the New Brighton Horticultural Society took its place among the institutions of the day. As soon as we can procure an official list, we shall give a list of the prizes, officers, etc., and the details of the exhibition.

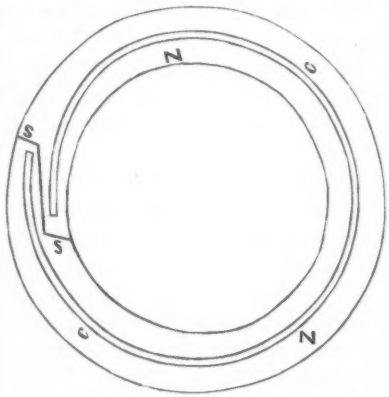
BULBS.—Mr. Bridgeman, of New York, has sent us a sample of his bulbs, for which he will please accept our thanks. The kinds are choice, and the bulbs as fine as bulbs can be. We wish all our readers had some as good. They are indispensable for winter blooming.

THE ADIRONDAC GRAPE.—We have received from Mr. Bailey, of Plattsburgh, a bunch of this new grape, which is said to ripen two weeks before the Isabella. We regret to say that the specimen was too imperfect to enable us to form a just opinion of it, the berries having shriveled and lost their flavor. We shall endeavor to learn more about it.

A BLUE BLACKBERRY.—We saw recently at Mr. Erhard's, at Ravenswood, a Blackberry so thickly covered with blue bloom as to make the term "blue" quite appropriate, if it does not rub of too readily. It is a trailing variety, a seedling of Rubus cæsius, a native of Europe. Of the fruit we can say but little, the plants having been cut up for propagating. The little we saw had large pips with small seeds. The flavor was agreeable, and it may prove to be good; but of that we shall be able to say something after another season.

FROST.—Mr. Stewart writes us that they had their first white frost at Middle Haddam, Conn., on the 14th of October. We have had none about New York yet. The season has been remarkable thus far for its freedom from frost.

GALVANIC SLUG AND SNAIL SHOCKER.—The following "shocking" method of destroying slugs and snails we take from the *Gardeners' Chronicle*. These pests are getting to be very annoying among us, particularly in frames and among orchideous plants. The remedy is curious, simple, and within reach of all; but of its efficacy we have no personal knowledge.



"Having a few pet plants which slugs and snails are particularly fond of as food, I have devised the following simple and efficacious mode of protecting them against their and my enemies; and as this plan may be useful to some of your readers, I herewith send you a description of my galvanic circle. Procure a flat ring of zinc, large enough to encircle the plant; make a slit in the ring after the manner of a key-ring, so that it can be put round the stem of the plant and then rest upon the ground. Now twist a copper wire into a ring very nearly of the same circumference as the flat zinc ring, and putting it round the plant, let it rest upon the zinc, as in the illustration. No slug or snail will cross that magic circle; they can drag their slimy way upon the zinc well enough, but let them touch the copper at the same time, and they will receive a galvanic shock sufficient to induce them at once to recoil from the barrier. It will, of course, become evident that mural fruit can in a similar way be protected by fastening along the wall two

narrow ribbons of the metals mentioned. Other applications of this principle will doubtless be made in many gardens as the occasions arise. In the illustration Z Z is the zinc, S the slit in it, C C the copper wire.—*Septimus Piesse, Chiswick.*"

Catalogue of *Charles F. Erhard's* Nursery, Ravenswood, L. I., for fall of 1861 and spring of 1862.—This nursery is devoted mainly to small fruits and Pears.

Correspondence.

EDITOR OF THE HORTICULTURIST:—*Dear Sir:* I was induced to write to you in regard to growing fruit trees and grape-vines in moss baskets, by several articles I read in your interesting paper, and as I am one of the many who have seen this done for the first time, you will allow me to join my report to those you have already had.

A couple of months ago, I had the pleasure of visiting the beautiful grounds of Hon. W. B. Lawrence, and was introduced to Mr. Chamberlain, who kindly took me to the greenhouses, and showed me, besides some curious and rare flowers, the moss-baskets in question.

The effect was beautiful! Imagine a quantity of graceful moss-baskets hanging from the rafters, with luxuriant growth of grapes; bunches hanging (not tied) every six inches around the baskets, equal in size to those trained along the rafters and in pots. As I was expressing my astonishment that such a crop could be grown in so small a space, Mr. Chamberlain took one of them down, and placed it in my hands. I can not tell you how surprised I was to find them so extremely light.

He afterwards showed me the empty wire baskets. They were of a variety of elegant shapes, about two feet in diameter, containing a tin basin, such as those used in the country as washbasins, very shallow, about three inches and a half in depth, and not more than fifteen inches in diameter, with a few small holes in the centre, the space between the basket and the basin being filled with moss. On a table I saw some of the artificial soil which is used for the baskets: it was of a grayish color, but I do not know whether it was sand and charcoal. From what I have seen and handled, I can infer that there could be no water, except the necessary moisture contained in the soil; that "the roots were *not* surrounded with water," and that "in this basket there was no cup full of water," as stated by Mr. William Carmiencke.

There seems to be a prevalent idea that the moss was used as a means of nourishing the vine. Such is not the case; for it has no communication with the

plant, and makes the baskets appear a great deal larger, and to contain more soil than they really do. I saw subsequently some fine specimens of Pineapples in pots, but the largest plant and the finest fruit was in a patent basket.

With an apology for taking so much of your time, I am, Sir, very respectfully your obedient servant, L. Dovilliers, M. D.

Newport, October 1st, 1861.

[We have to thank you, not only for the tone of your letter, but for a more satisfactory description of these baskets than we have yet seen.—Ed.]

Mr. Mead:—*Dear Sir:* The excellent article of Mr. Woodward in the Horticulturist, page 277, ought to be studied at once by those who dispute so loudly the nativity of the Delaware Grape. Mr. Prince and others, the "European party," constantly assert that its foreign origin is demonstrated by its dissimilarity to the American Grape; and they point to the Isabella, Catawba, Concord, Hartford Prolific, and the wild grapes, *labrusca* and *vulpina*, with which kinds the Delaware has nothing to do.

Let them compare it with the individuals of the *Vitis æstivalis*, the Elsingburg, and others, and the wonderful dissimilarity is gone. Indeed, its resemblance to the Clinton is so marked, that most persons would be unable to distinguish the young shoots, buds, and leaves. The same little currant-like parasite is also found on both.

Let Mr. Prince compare the Delaware and its own species.

I think the "Summer Grape" needs more attention: do not you? Its time is admirable. It has received no systematic treatment yet for seedlings, so far as I know; yet it has produced the chief American Grape. Yours,

New Bedford, August 10th, 1861. Æstivalis.

[We do not think you are quite on the Delaware track, but approaching it. We shall have some good words for you soon.—Ed.]

The Buckland Sweetwater Grape.—*Mr. Editor:*—In the September number of the Horticulturist you have been kind enough to give your readers an extract of the "Royal Horticultural Society, of London," all of which is very nice and very beautiful till you come to the Grape "question;" then your compositors have made Mr. Beaton say that "The bunches of the Buckland Sweetwater weighed six pounds four ounces!" From this your readers have a right to infer that there were more bunches than one, and that they weighed *six pounds four ounces each!* This is a monstrous Sweetwater, Mr. Mead, and such a very large *drop of Sweetwater* that most likely many of your readers will be after this *six-pounder* as soon as they can get it. I wonder if it would suit Beauregard down in Dixie?

To be serious, this is a typographical error, but should be corrected. We are willing to give them on the other side all credit justly due them, but they *can't*

grow Sweetwater Grapes (Buckland or any other) *to six pounds a bunch!* The report should be read thus: "*Three* bunches," in the place of "*The* bunches."

FOX MEADOW.

[Thank you for the correction.—We think the "Bullet" Grape would suit Beauregard better than the Sweetwater.—ED.]

VITAL FORCES IN PLANTS.

(*Continued from page* 116.)

"Much has been said relative to the food of vegetation, while but little is thought and said about these silent means, or *mechanical* principles *quietly* at work in furnishing us food. If this matter is put in the hands of really *competent scientific* minds, disposed and able to give it that attention the subject deserves, good may be derived. Great vitality promotes health and resists disease in our animal systems, and so may vitality in vegetation promote health. New grounds, having the unexhausted elements, as iron, salts, etc., do make better trees. There are localities where trees are long-lived and healthy, where the essential elements may pertain to the soil, and which may illustrate my thoughts. Decay of any manures in soil necessarily releases electricity, while it is desirable that there should be mineral manures for greater power and continuance; hence the necessity of knowing the contents of the soil. The condition of the ground materially affects the supply of vegetation, with whatever there is of nutriment in the soil. If the ground is hard, and weedy or grassy, but little *motive* power can be secured, and *that little so subdivided* with that which is useless that that which is cultivated can not be *built* up.

"Take a microscope and examine the operations of nature in regard to *motion* during change of properties of matter; mash seed, and acidulated water on it, on a glass under a microscope, and observe the varied motions under the electrical disturbances going on. Mere *absorption* of that water could not beget such action or recombination. The experiment will be suggestive of many others. I have very hastily, of a night, and without any attempt to systematize ideas, or to do it creditably to myself or the subject, just penned my thoughts, as presented, as *mere suggestions* to those more competent; nor have I time or ability to do the subject justice, and I desire others should consider the matter on its *own merits* without regard to the *source* of these suggestions.

Many residents of the country could afford to drain 100 feet square, for garden grounds, with cheap *iron* pipes, and connect them with a galvanic battery, continually working during the growing season, materially affecting the growth of vegetation. If the experiments referred to are reliable, the ground, being drained, becomes more porous, the air and light promoting greater chemical action, and hence a greater supply of the motive power.

"Life must be preceded by the dissolution of matter of various kinds. By means of telegraphic machinery, operated by electricity, as released from the de-

composing metals, we are in union with the world; and were it not for this power, it is doubtful if chemical action could be secured, and if it could be, it is doubtful if with air, the nutriment of the soil. Vegetation would, what we can grow, for want of a power to bring together the various elements composing our food. If these ideas are correct, we should seek a more *familiar* acquaintance with so *ingenious* and *so good a mechanic*, unceasingly employed in supplying our wants. But few, however, are prepared to think that such a *universal* mechanic exists, because but *little known*. We *introduce* the gentleman as worthy of our gratitude and highest esteem, and don't doubt but he will treat the most humble, in seeking his acquaintance, in accordance with his known liberality.

"Liebig is right in claiming the use of minerals, and others vegetable manures, but neither have seen the above philosophy. Minerals, by creating greater vitality, economize what little nutriment there may be in the soil naturally.

"Capillary attraction in *dead* and *living* vegetation may be *very* different. The simple *adhesion* of fluids to *sides* of capillaries, in *dead* matter, will overcome but a slight amount of *gravity*, the sides of the capillaries *probably* having lost their contractile organs and tenacity for electricity or conducting power. The living capillaries are *probably* endowed with slight contractile organs and powers of conducting electricity, there being a perfect connection between the roots in the ground and leaves in the air, by capillaries, to hold and conduct the sap to the leaves, where it is elaborated. The chemical action, during change, disturbing the electric condition of the ascending and descending capillaries, one being negative and the other positive, draws up the sap against gravity, and allows the elaborated sap to be operated on by gravity, and it descends. On severing these capillaries, the sap flows down, because the capillaries above the wound have lost the electrical condition resulting from a perfect connection of the negative and positive capillaries or nerves attending each. Hence a loss of the mechanical power of drawing up the sap; the positive electricity adhering to sides of ascending capillaries, attracting each drop of the sap, and overcoming gravity, operating on the aggregate weight of the minute column.

"No such a column of fluid can ascend a *dead* capillary. The oil ceases to ascend a wick as soon as the combustion ceases, and it is doubtful if the electricity constantly evolved during combustion does not materially promote the ascent of the fluid. A fluid will rise to the upper end of a short wick or tube, but will not flow over, unless the end be bent downward, forming a siphon, the descending liquid drawing up the liquid. Some other power must be seen to account for ascending sap in trees than mere capillary attraction, or mere adhesion to sides of capillaries. There is no analogy between the limited ascent of a fluid in a *dead* tube, and the great height of ascent in *living* tubes.

While fluids will rise many feet in a *living* tree, let that tree be severed from the earth and die, and then its dead roots be placed in water, and a fluid would not rise in it the twentieth extent of its length, showing some living or vital principle at work, attracting upward the sap. There is a power of attraction as well as repulsion; heat radiates because attracted, and thus diffuses and equalizes. So electricity, by virtue of its release during chemical action in the soil, is active in the earth, and also in leaves of trees; the two being connected by nerves, or the conducting power of the capillaries. Those disputing the theory of the attractive power of electricity, thus generated, accounting for capillary attraction, should explain why sap will spill out when capillaries are cut, and electric connection between earth and leaves severed. If mere capillary attraction must account for ascent of sap, then dead pieces of trees, or fresh-cut parts of trees, would equally suck up the sap. My proposition is sustained by experience.

"Elongated cells, or tubes, or capillaries, have a mechanical *form*, the same as our blood-vessels, to serve as canals to convey fluids from which the plant is built up; and while they thus serve such a purpose, we must look elsewhere for the *motive power* to the movements of the sap. As yet, but little is known of this *motive* power in plants or animals. We do know that in every change of density of matter, or chemical change, electricity is disturbed, and flows, or is released, and seeks to be industrious in promoting new arrangements, by carrying matter subject to certain laws in recombining. It is not unlikely that the living tubes, or capillaries, formed of cells elongated, have a kind of valves, alternately contracting by electric excitement, forcing upward the sap, which valves, could they be laid open under the microscope, could be seen; if not, then the tenacity of sap adhering to sides of tubes must arise from the perfect electric condition and connection between roots and leaves.

"*Motion* presupposes something more than mere *mechanical force*. Our physical systems are powerful *galvanic batteries*, manufacturing the life-force, or vital physical principle, during combination of air and carbon in the lungs, and chemical action of food in the stomach; the heart, between the two positive and negative conditions, derives its force of propulsion of blood through our arteries and veins from the attractive forces of the two electricities. The mechanical form of tubes may remain, and yet no action or motion can go on within them; there must be *life* derived from *death*—the release of the bound-up living principle in dead matter, by its chemical decomposition; and if there is no chemical change going on, no life-force can be secured. Hence the force of my proposition, that ground must be frequently stirred up to let in light and heat, and to aid *contact of varied manures*, or earthy matter, promotive of chemical action—an essential pre-requisite to secure life and force; and when thus secured, not allowing that life-force to be directed, from that which is being cultivated to weeds, etc. This developed mechanical power must be directed only to that we cultivate; and extent of crop depends upon extent developed of this life-force, and to secure it

largely we must furnish the soil with diverse manures, especially mineral manures, as furnishing more of life-force, to work up the nutriment from animal and vegetable manures. The greater the diversity of manures, the greater the chemical action, provided contact is promoted by frequent stirring, and letting in light and heat of sun."

[At a future time we shall offer some comments on this article.—Ed.]

BROOKLYN HORTICULTURAL SOCIETY—SPEECH OF PRESIDENT DEGRAUW.

Concluded from page 438.

Another object, far more interesting, invites your care. It is the culture of plants indigenous to our soil; they are confided to our guardianship. But look around you; see them perishing in multitudes beneath the plowshare and the axe. Certain species and varieties which in old time adorned the verdant mantle of the earth, but their memorials, transmitted to us in the rocks, is a demonstration of their original existence. And shall it ever be recorded of any valuable varieties of our native plants that their sweetness has expired on the "desert air?" By more active and energetic measures, I trust yet to see a garden established, in which will be collected from our woodlands and our fields a beauteous and bright floral galaxy—which would be both practical and scientific, discovering to us large views, which it is noble to possess, and could we but effect their consummation the reality would be magnificent. We might then call together, and exult as we contemplate, the rural families of a rural offspring. We might find within this native circle, when possessed of suitable advantages for their improvement, the rarest and most inestimable qualities to please and benefit mankind. Among the changes that are exhibited upon the surface of the globe, none are more worthy of remark than the transmutations which are effected in the vegetable tribes. Our celery is but the parsley, or smallage, in an advanced state of cultivation. The cauliflower and the borecole have issued from the humblest plants. When in natural condition, the asparagus can scarcely be recognized as that which, when domesticated, is a table luxury; and the potato, which is the sustenance of millions of our race, has been but generally cultivated about one hundred and thirty years—and, the most useful of all esculents, it is insignificant and uninviting in its natural state. And can we for a moment think that the progress of discovery has been arrested? At this moment many are engaged in traversing our fruitful territories that they may answer the inquiry. Let us emulate their zeal, and let us not value at a lower estimate than others those rare gifts which the great God of nature has placed in our hands. Let us coöperate in the attainment of our interesting purpose; let us tie together our rods, in the

manner of the Roman faces, and this union can not fail to give us permanence and power. Let us persevere to the full attainment of the object which we contemplate. Then, by science and industry, we will contribute to the stores of human happiness, our science will take the lead, and our footsteps be honored. I view that our cause is a noble and benevolent one. It exerts a salutary, intellectual, and moral influence. It has rich resources for the head, and it has rich resources for the heart. While it instructs and edifies, ennobles and exalts, it awakens feelings of philanthropy, and its motto should be Peace on Earth. The inscription above its portals should be: Enter, for here is the most magnificent display of the works of God. Like that holy faith which we profess, it calls up sympathies that would excite every one within the extensive sphere of its operation to partake of its innumerable enjoyments and its manifold rewards. Were it not as abundant in its resources as I have alleged, and were it to be merely pursued for the pleasure which flows from it, you will acknowledge, I doubt not, that it is a mental recreation the most liberal and polite; for other studies are not appropriate at all times, to all ages, and in every place; but this has nourishment for us while we are young, and pleasing joys when we are old. In prosperity it is an ornament, and in adversity a refuge and solace. It delights us when at home, and is no impediment abroad. Whether we go forth to meditate at eventide, or are occupied in journeying from place to place, or are wandering through the country in our rural recreations, it is an agreeable companion and a constant friend. If any are themselves unable to pursue the subject, or want a relish for its charms, yet when they see it blooming about others they should not withhold the tribute of their commendation. Our literary institutions should instil into the youthful minds under their charge a love of nature. Teach them

> "To mark in every magic change of scene
> The grand diversity of Nature's laws,
> Yet find in all the ever-present God."

You will thus give them an instructive friend, whose voice will always be cheering, and life never have to be awakened from the slumbers of solitude—

> "They may read and read,
> And read again, and still find something new,
> Something to please, and something to instruct."

Could I accost the ladies of our city, whose attributes are symbolized by the delights of Flora, I might maintain the justice and propriety with which a certain oriental language uses the same words to designate both flowers and the fair. Every estimable virtue that adorns the sex has its type in these exquisite manifestations of the Benignant. And they are adapted not only to the personal embellishment, but for the intellectual and moral discipline of those to whom I would commend the contemplation of their loveliness. Their province is not

only to afford the senses a rich feast, to fill with their rich perfume the air we breathe, and to allure the eye by their conformations and by their tints of color, but by sympathies the most refined, and pure, and amiable, to exalt the soul.

"The spleen is seldom found where Flora reigns.
The lowering eye, the petulance, the frown,
And sullen sadness, that o'ershade, distort,
And mar the face of beauty, when no cause
For such immeasurable woes appears—
These Flora banishes, and gives the fair
Sweet smiles and bloom less transient than her own."

I have urged upon our city authorities the importance of sustaining the cause that I have so long espoused, that we should have more parks, in one of which shall be a Botanical Garden, and that such as we have should become pleasure-grounds, disposed and decorated to regale our citizens; within their walks should be no fumes of the intoxicating deity, but the pervading pure and salutary influence of nature's God. There is a peacefulness and a serenity in rural scenes that have at all times had a charm for the philosopher and patriot. That hand which held the destinies of ancient Rome, when it had guided and saved the nation, held the plow on the farm of Cincinnatus. In the hearts of all his countrymen is the memorial of him who loved Mount Vernon's calm retreat. The shades of Monticello have been forever consecrated, and the memory of our Lafayette is in the memory of cultivating his Lagrange. We rejoice that there is a happy realm where can be realized the joys which inspiration teaches were the first blessedness of man. I would desire to resort thither, with the entire human family, that in the tranquillity of the terrestrial Eden we might live in rural happiness, and die in peace; but we shall in vain seek the enviable spot. One tells us it was in the confines of the ancient Armenia; another points us for its bliss to the lovely valley of Cashmere, and another teaches that in Persia were its gladdening groves; but it is no longer upon earth. Like good men of old, it has been translated. Yet I would indulge in reference to it my kindest sympathies —I would embody my best feelings in a devout ejaculation, that when our studies cease, and toil shall have ceased here below—when, like the grass that withers, we shall have mingled with the dust, we shall hereafter meet within the bowers, and be regaled with the enrapturing transports of that Eden in the skies.

I have thus presented Horticulture and its influences, and the only source of regret that has overshadowed me is, that the mantle has not fallen on one far more able than myself to discuss such an important and absorbing subject, but such as I have presented to you are the thoughts that animate my intelligence, and I leave it with you to determine whether a subject so vast, unbounded, and magnificent is not worthy of your most profound consideration, culture, and support.

Geraniums.

1. Senior Wrangler. 2. Diophantus. 3. The Moor.

for THE HORTICULTURIST,